

Trump's Big Dump / Fleming Is Forever

# Newsweek®

# THE FUTURE OF FARMING

30.10.2015-06.11.2015

THE NUTS  
AND BOLTS  
OF HOW WE  
WILL FEED  
THE WORLD





A close-up, high-contrast photograph of a gorilla's face, focusing on its eye and nose. The gorilla's fur is dark and textured, and its eye is a striking yellowish-brown. The lighting is dramatic, highlighting the contours of its face.

# HELP SAVE THE 'WOW'

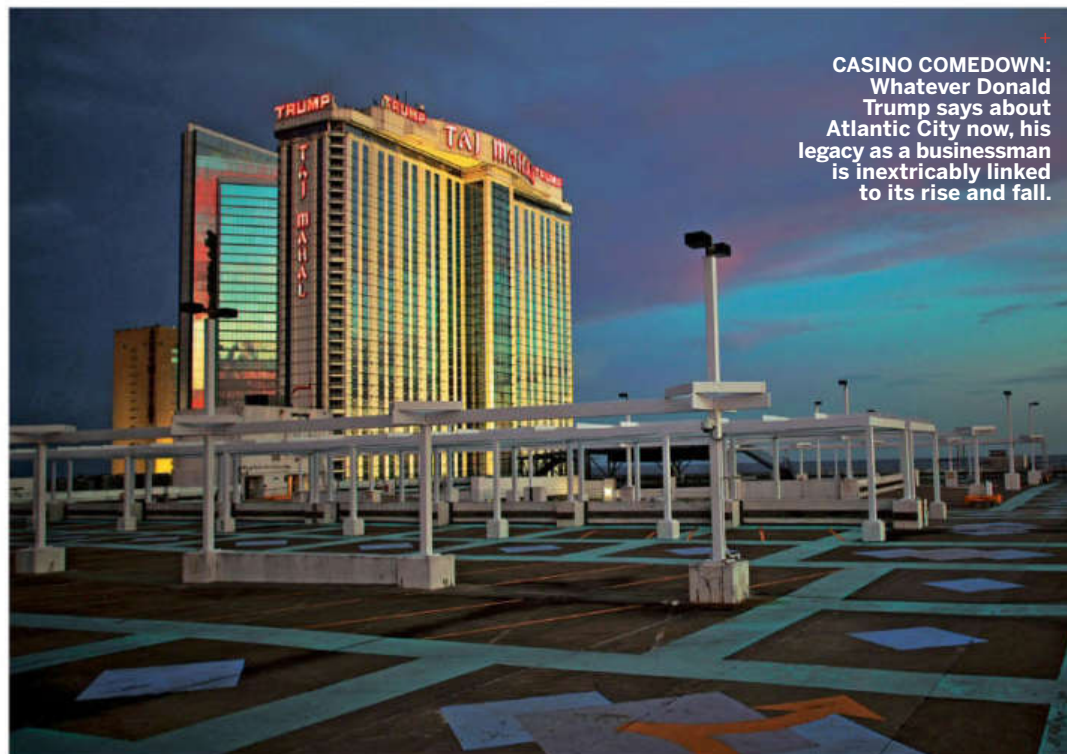
These giants of the animal kingdom need help. Despite their strength and cunning they're no match for a poacher's rifle. For 50 years WWF has been securing protected areas worldwide, but these aren't enough to stop the killing. To disrupt the sophisticated criminal gangs supplying animal parts to lucrative illegal markets, we are working with governments to toughen law enforcement. We're also working with consumers to reduce the demand for unlawful wildlife products. Help us look after the world where you live at [panda.org/50](https://panda.org/50)





# Newsweek

NOVEMBER 6, 2015 / VOL. 165 / NO. 16



**CASINO COMEDOWN:**  
Whatever Donald Trump says about Atlantic City now, his legacy as a businessman is inextricably linked to its rise and fall.

## FEATURES

### 30 Sow What?

The future of farming is already here; the planet just needs to embrace it. *by Betsy Isaacson*

### 40 Trump's Big Dump

The mogul made his name in Atlantic City but left ruins behind. *by Nina Burleigh*

COVER CREDIT: ILLUSTRATION BY BILL MAYER

## DEPARTMENTS

### BIG SHOTS

- 4 **Bethlehem, West Bank**  
Tears of Rage
- 6 **Aleppo, Syria**  
Rubble-Rouser
- 8 **Gilze-Rijen, Netherlands**  
CSI: Ukraine
- 10 **San Antonio**  
Two-faced

### PAGE ONE

- 12 **Israel**  
The Way of the Knife
- 16 **Russia**  
Putin's Other Muslim Front

- 19 **Environment**  
Be Nice to Ice
- 20 **Myanmar**  
The Generals' Election
- 22 **Politics**  
A Dickey Proposition
- 26 **Chile**  
Murder, He Wrote
- 29 **Conventional Wisdom Watch**

## NEW WORLD

- 46 **Science**  
From Breakfast in Styrofoam to Styrofoam for Breakfast
- 48 **Startups**  
The Billion-Dollar Mistake
- 50 **Medicine**  
Clinical Racism
- 54 **Health**  
He's Got Brain on the Brain

## DOWNTIME

- 58 **Music**  
Joanna Newsom's High Dive
- 62 **Alcohol**  
Burden of Proof
- 65 **Movies**  
Two Questions With Helena Bonham Carter
- 66 **Books**  
Fleming Is Forever
- 68 **Rewind**  
25 Years



FOR MORE HEADLINES,  
GO TO [NEWSWEEK.COM](http://NEWSWEEK.COM)

# Newsweek

EDITOR-IN-CHIEF

**Jim Impoco**

DEPUTY EDITOR

**Bob Roe**

MANAGING EDITOR

**Kira Bindrim**

EUROPEAN EDITOR

**Matt McAllester**

CONTRIBUTING DESIGN DIRECTOR

**Priest + Grace**

INTERNATIONAL EDITOR

**Claudia Parsons**

CO-FOUNDER, CHIEF EXECUTIVE OFFICER

**Etienne Uzac**

CO-FOUNDER, CHIEF CONTENT OFFICER

**Johnathan Davis**

MANAGING DIRECTOR, EMEA

**Dev Pragad**

## EUROPEAN EDITION

### EDITORIAL

NEWS EDITOR

**Barney Guiton**

DEPUTY NEWS EDITOR

**Lucy Draper**

REPORTERS

**Felicity Capon**

**Conor Gaffey**

**Mirren Gidda**

**Jack Moore**

**Damien Sharkov**

SPECIAL CORRESPONDENTS

**Robert Chalmers**

**Harry Eyres**

**Nick Foulkes**

**Adam LeBor**

**Owen Matthews**

### ART + PHOTO

ART DIRECTOR

**Michael Friel**

DESIGNER

**Jessica Fitzgerald**

PHOTO DIRECTOR

**Shaminder Dulai**

PHOTO EDITOR

**Jared T. Miller**

CONTRIBUTING PHOTO EDITOR

**Chris Allbritton**

CONTRIBUTING DIGITAL DESIGNER

**Tuomas Korpijaakko**

PRODUCTION MANAGER

**Helen J. Russell**

CONTRIBUTING DIGITAL IMAGING SPECIALIST

**Katy Lyness**

### CONTRIBUTING WRITERS

**Victoria Bekiempis, Ryan Bort, Jonathan Broder, Nina Burleigh, Janine Di Giovanni, Kurt Eichenwald, Jessica Firger, Abigail Jones, Max Kutner, Seung Lee, Gogo Lidz, Douglas Main, Leah McGrath Goodman, Jack Martinez, Paula Mejia, Polly Mosendz, Alexander Nazaryan, Bill Powell, Michele Richinick, Winston Ross, Zoë Schlanger, Zach Schonfeld, Jeff Stein, Lauren Walker, John Walters, Lucy Westcott, Taylor Wofford, Stav Ziv**

### CONTRIBUTING EDITORS

**Elijah Wolfson, R.M. Schneiderman, Matt Cooper, Cady Drell, Grant Burningham, Jackie Bischof, John Seeley, Kevin Dolak, Teri Wagner Flynn**

PUBLISHED BY

**Newsweek LTD, a division of IBT Media Group LTD**

GENERAL MANAGER

**Dave Martin**

### ADVERTISING

SENIOR SALES DIRECTOR

**Chantal Mamboury**

GROUP ADVERTISING DIRECTOR

**Una Reynolds**

COMMERCIAL DIRECTOR

**Jeremy Makin**

SALES DIRECTOR

**Gemma Bell**

SENIOR COMMERCIAL MANAGER

**Pierce Cook-Anderson**

### MARKETING AND CIRCULATION

SUBSCRIPTION MARKETING MANAGER

**Tom Nichols**

SUBSCRIPTION FULFILMENT MANAGER

**Samantha Rhodes**

NEWSSTAND MANAGER

**Kim Sermon**

BUSINESS DEVELOPMENT MANAGER

**Tom Rendell**



# SAVE UP TO 75%

WITH A TRIAL SUBSCRIPTION OFFER

- ✓ WEEKLY MAGAZINE ✓ INCLUDES DELIVERY
- ✓ DAILY NEWSLETTER ✓ UNLIMITED WEB ACCESS
- ✓ IPAD / IPHONE APP ACCESS

**Visit [Newsweek.com/subscribe](http://Newsweek.com/subscribe)**



# BIG SHOTS

ISRAEL

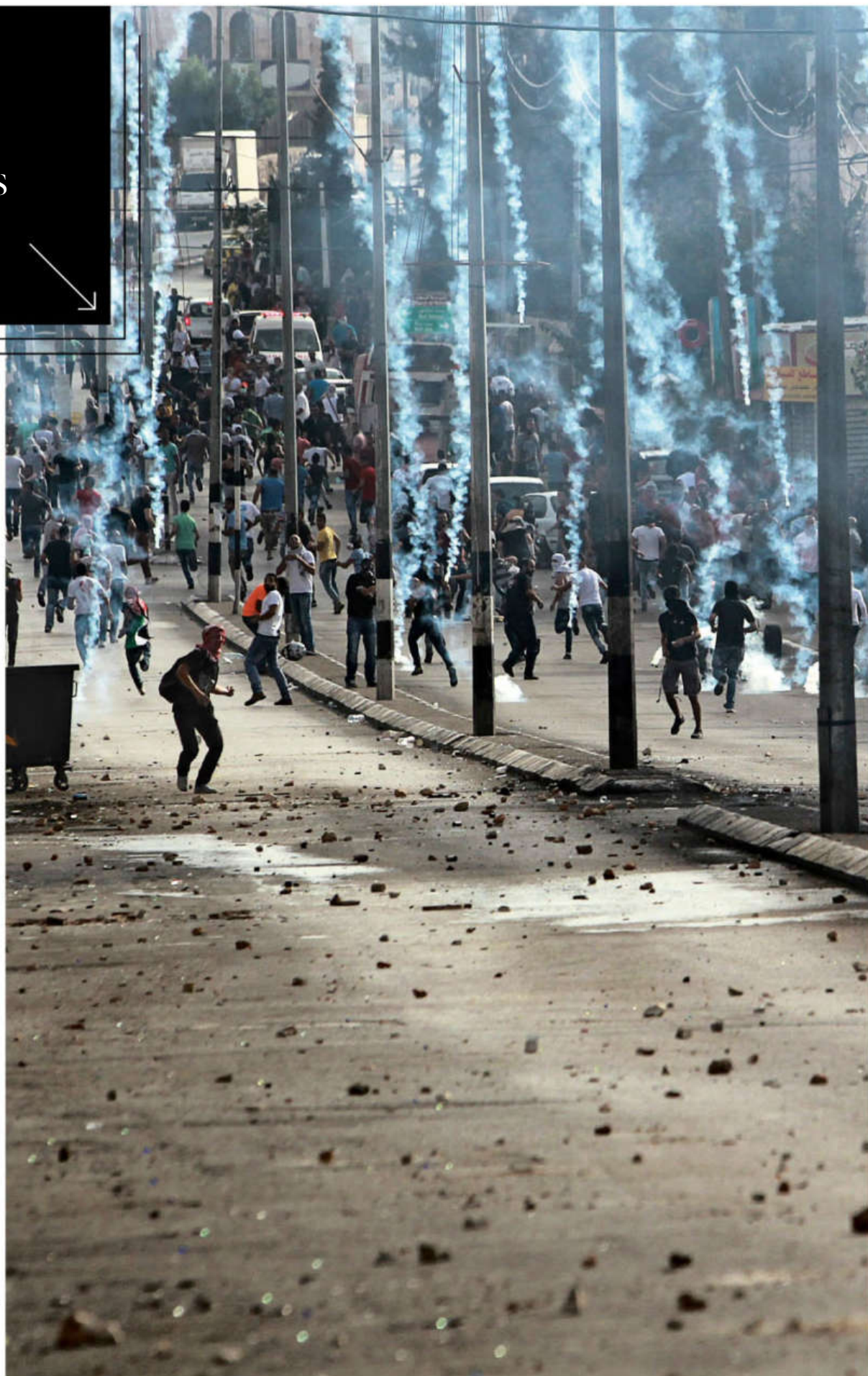
## Tears of Rage

Bethlehem, West Bank—

A member of the Israeli security forces watches as Palestinian stone throwers run away from tear gas during clashes on October 13 in Bethlehem. A Palestinian was killed in the clashes, Palestinian medical sources said. At least eight Israelis and dozens of Palestinians have been killed in a series of stabbings and other attacks and protests by Palestinians, and the Israeli response to them.



MUSA AL-SHAER













## SYRIA

**Rubble-  
Rouser**

Aleppo, Syria—Rescuers use a car jack to free a man pinned under rubble following Russian airstrikes on October 13. Russia began bombing in late September after a request from Syrian President Bashar al-Assad for military support. Within days of the first strikes, the Kremlin boasted it took out nearly a dozen ISIS and Al-Qaeda targets, but the U.S. and other critics accused President Vladimir Putin's military of also targeting other rebel groups opposed to Assad. U.S. Secretary of State John Kerry warned that "propping up Assad will ultimately fail and also unfortunately lead to more bloodshed, more refugees, more extremism and more jihadis."



MAMUN EBU OMER







NETHERLANDS

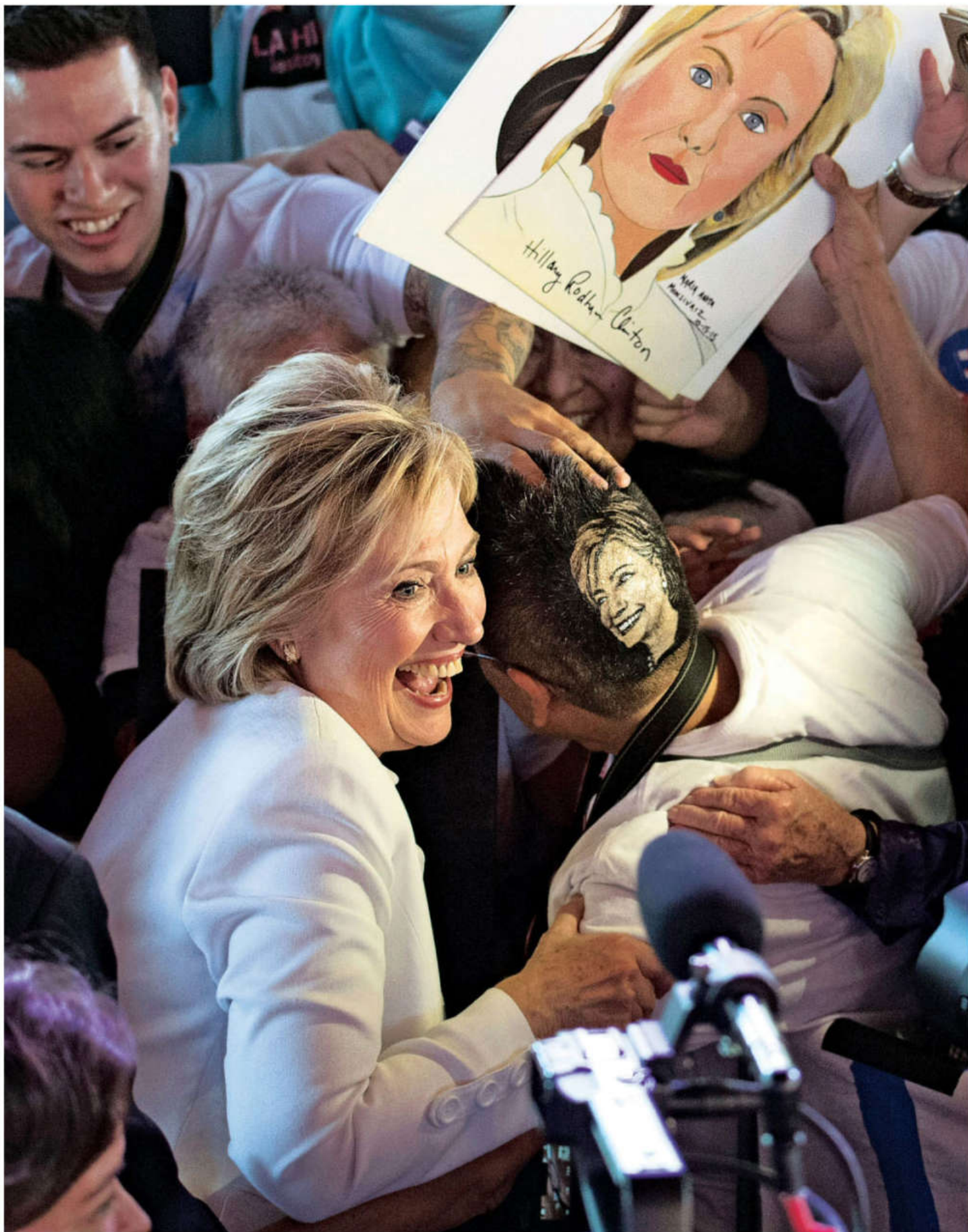
## CSI: Ukraine

Gilze-Rijen, Netherlands— Journalists photograph part of the reconstructed fuselage of downed Malaysia Airlines Flight 17, after the October 13 presentation of the Dutch Safety Board's final report on the crash. The aircraft was shot down over Ukrainian airspace last year, killing all 298 people on board. The report found that a Russian-built Buk missile, fired from the ground in territory held by Russian-backed separatists, had torn off the forward section of the plane. Russia denied any involvement and has vetoed a U.N. resolution to create an independent international tribunal to investigate the incident and prosecute those responsible.



PETER DEJONG







U.S.A.

## Two Faced

San Antonio— Democratic presidential candidate Hillary Clinton poses for a picture with supporter Maria Anita Monsiv-aiz, who has her hair styled with Clinton's image, at the end of a "Latinos for Hillary" rally in Texas on October 15. The former secretary of state was due to testify before the House committee examining the 2012 attack on the U.S. diplomatic compound in Benghazi, Libya, amid growing criticism from Democrats that Republicans' primary goal in setting up the committee was to discredit Clinton as a presidential candidate.



DARREN ABATE





# P A G E O N E

RUSSIA

ENVIRONMENT

ISRAEL

MYANMAR

POLITICS

CHILE

## THE WAY OF THE KNIFE

# Two decades after the murder of Yitzhak Rabin, the olive branch of peace has been replaced by a dagger

**ALMOST** 20 years ago, a Jewish extremist named Yigal Amir fired two hollow-point bullets into the back of Yitzhak Rabin as he left a peace rally in Tel Aviv, leaving him fatally wounded. Political assassinations don't always alter the future of a country, but the murder of the Israeli prime minister delivered exactly what his assassin had prayed for: a fatal blow to a fragile peace process, which many hoped might end a century of communal warfare between Jews and Palestinians.

Since Rabin's death, the two peoples—living as neighbors and enemies on a land they both claim—have been caught in a seemingly endless cycle of deepening hatred, failed negotiations and growing violence. The most troubling legacy of Rabin's assassination is how easily animosity can burst into bloodletting. The latest paroxysm occurred in October, as more than three dozen Jews and Arabs died in a series of Palestinian stabbings and Israeli gunfire across the country, in the West Bank and along the border fence with Gaza.

This conflict's front lines are now anywhere

Jews and Palestinians routinely encounter one another—riding a bus, shopping in a market or walking down the street. Rattled Israeli officials are urging Jews to carry licensed firearms wherever they go. Other Israelis are stocking up on pepper spray and stun guns, suspicious of every Arab who lives or works among them. “How can I trust the Arab guy who is working in the supermarket?” retired Major General Amnon Reshef, leader of a group of former senior officers calling for stronger security measures, tells *Newsweek*. “I consider him my friend, but who knows what will be in a couple of minutes?”

Palestinians are calling the current round of violence the third intifada, the Arabic word for “shaking off” or rising up against Israel's military occupation, now in its 48th year. But the first insurrection, which began in December 1987, never really ended. That initial round of Palestinian stone-throwing and mass demonstrations subsided in 1993, after Rabin signed the Oslo peace accords, which supposedly ended the

BY  
**JONATHAN BRODER**  
[@JonathanBroder1](#)  
AND  
**JACK MOORE**  
[@JFXM](#)

*Additional reporting by  
Joshua Mitnick in Jerusalem.*





ABED ZAGOUT/PACIFIC PRESS/LIGHTROCKET/GETTY

**SHARP DIFFERENCES:**  
A Palestinian boy holds up knives during an anti-Israel protest in Jabalia, in the northern Gaza Strip, on October 16.





conflict and raised hopes for a final settlement. But since Rabin's murder, Oslo has steadily unraveled, and the conflict has continued.

In this chronic struggle between neighbors, only the weapons have changed. With the failure of peace talks at Camp David in 2000, the same Palestinian security forces that had begun to work with their Israeli counterparts under Oslo turned their guns against them, and Hamas militants carried out their signature suicide bombings, killing nearly 1,000 Jews. In response, Israel deployed blast walls and barbed wire for a security barrier that largely sealed off the West Bank and Gaza Strip from the main Jewish population centers. Today, over five months after Secretary of State John Kerry aborted the most recent U.S. diplomatic effort, young, frustrated Palestinians are using whatever weapons are handy—kitchen knives, screwdrivers and, in one case, a potato peeler—in what appear to be lone wolf attacks that almost always end with the assailant dying in a hail of Israeli gunfire. Some Palestinians have even used their cars as weapons, plowing into crowds of pedestrians.

Israeli officials blame Palestinian President Mahmoud Abbas for inciting the violence with his calls to defend a sacred compound in Jerusalem's walled Old City—known to Muslims as Haram al-Sharif, the noble sanctuary, and to Jews as the Temple Mount. Abbas was reacting to noisy demonstrations by Jewish extremists and right-wing Israeli lawmakers demanding a change to the nearly 50-year-old arrangement that forbids Jews from praying at the site. The violence has continued despite Israeli denials of any planned change. "The claim that Israel is trying to change the status quo on the Temple Mount is just a bunch of lies," Jerusalem's Israeli mayor, Nir Barkat, tells *Newsweek*. "Unfortunately, some of the teenagers believe it. The wave of violence is based on that."

Kerry is headed back to the region in a fresh bid to quell the unrest. Diplomatic sources tell *Newsweek* the effort may involve assurances from King Abdullah II of Jordan, which still maintains authority over the holy site, and possibly

a high-profile declaration from Israel that it will not upend the status quo.

But many believe the violence is primarily the result of a deepening Palestinian despair over a seemingly endless occupation and the absence of any active peace process. Mustafa Barghouti, a veteran Palestinian politician and activist, points to the two decades since Rabin's assassination as a period when the late prime minister's successors slowed the implementation of the Oslo accords and expanded the colonization of the West Bank, establishing unequal sets of laws for Jewish settlers and Palestinians, among other things. Barghouti says the violence is also a revolt against Abbas, who has appeared powerless to stop Jewish settlements and end the occupation. "They are challenging the political leadership, which has failed to produce what they're asking

**"HOW CAN I TRUST THE ARAB GUY WHO IS WORKING IN THE SUPERMARKET? I CONSIDER HIM MY FRIEND, BUT WHO KNOWS WHAT WILL BE IN A COUPLE OF MINUTES?"**

for, which is independence and freedom," Barghouti told the BBC. "They've been promised that negotiations would lead to a solution for 20 years now, and all they see is more oppression and a system of apartheid."

Such pessimism is in sharp contrast to the hopes that buoyed both Israelis and Palestinians on September 13, 1993, when Rabin and Palestinian leader Yasir Arafat shook hands on the White House lawn after signing the Oslo accords. The historic agreement was the first between Jews and Palestinians to end their conflict. It included mutual recognition and a schedule for Israeli troop withdrawals from the Gaza Strip and parts of the West Bank and opened a path to a broader peace between Israel and the Arab world. President Bill Clinton, who presided over the ceremony, praised the two leaders for their "brave gamble that the future can be better than the past."

Just how much of a gamble Rabin and Arafat were taking quickly became clear. Extremists on both sides tried repeatedly to scuttle the accords. Hamas bombers killed scores of Israelis on buses and in cafés, rejecting any deal that didn't





replace Israel with an Islamic state. On the Israeli side, right-wing settlers and religious extremists opposed any deal that ceded any Palestinian territories, which they believed God had promised to the Jews. In increasingly vitriolic demonstrations, they portrayed Rabin as a terrorist, a Nazi and a traitor. Some, like Amir, believed they had a religious duty to kill Rabin to save Israel. And to this day, the assassin, now serving a life sentence for his crime, remains unrepentant.

At the forefront of the anti-Rabin demonstrations was Benjamin Netanyahu, then the new leader of the right-wing Likud opposition. Instead of speaking out against the demonization of the Israeli prime minister, Netanyahu fed the country's anxiety over security in hopes of deposing him.

Today, Netanyahu is in his fourth term as the leader of Israel, the clear beneficiary (and agent) of the country's steady drift to the right. Analysts believe this is largely because of security fears and a growing Israeli conviction that the Palestinians are too politically fractured to sign and execute a peace deal. Many analysts believe these divisions are one of the reasons why Arafat turned down what the Israelis called a generous offer to withdraw from much of the West

Bank during the Camp David negotiations.

But Israeli leaders since Rabin haven't made the peace process any easier. After Netanyahu was elected for his second term in 2009, he refused to endorse an offer by his predecessor, Ehud Olmert, to withdraw from 93 percent of the territory. Abbas also complains that Netanyahu has continued to expand existing Jewish settlements during peace talks, which some analysts have compared to two people negotiating over a pizza while one of them eats it. More recently, the Israeli leader made a new demand: that the Palestinians recognize Israel as a Jewish state. Abbas says that would disenfranchise Israel's non-Jewish Palestinian citizens, who make up 25 percent of the country's population. Besides, Palestinian officials point out, they formally recognized Israel in 1988 and again in the Oslo accords.

During Netanyahu's most recent national campaign in March, he disavowed the two-state solution, a move that angered President Barack Obama but that analysts say helped him win the election. The prime minister now leads the most right-wing government in the country's history, with key coalition partners demanding the annexation of the West Bank. Meanwhile, Rabin's Labor Party has been unable to win

over a majority of Israelis, who largely blame the recent violence on what they see as a blind Palestinian hatred of Jews and give little importance, as Rabin did, to the corrosive effects of the occupation.

Reflecting on the 20th anniversary of Rabin's death, Roberta Fahn Schoffman, an American-born political consultant living in Jerusalem, offers a grim assessment of its impact. "Yigal Amir murdered both the man and the vision for a peaceful resolution to this tragic conflict," she wrote in an online commentary for the Israel Policy Forum, a think tank that advocates for a two-state solution. "Without another leader like Rabin, willing to stand up even in these horrendous days and state loudly the need for a political process...we will see more acts of terror, we will build cement obstacles to block off Palestinian villages, we will call upon more Israeli civilians to arm themselves whenever they leave their homes and we will watch more children on both sides become both victims and martyrs." ■

**CANNON FODDER:** Palestinians carry an injured protester after clashes with Israeli security forces during a demonstration near Bureij in the Gaza Strip.







## PUTIN'S WAR AT HOME

# Russia's 20 million Muslims may include hundreds of thousands of ISIS supporters

**"ASSAD IS A heartless killer!"** rages Ruslan, a middle-aged worshipper at Moscow's biggest mosque, just days after Russia's dramatic entry into Syria's civil war in support of Syrian President Bashar al-Assad. "It's a disgrace that the Kremlin is supporting his bloody regime," he adds, as an unseasonal snowstorm obscures the mosque's golden domes. Another man arriving for evening prayers, a bearded 20-something named Arslan, thinks the opposite. "Russia is doing the right thing in backing the Syrian authorities against ISIS and other terrorists," he says, adding that he has heard "nothing at all" about human rights abuses committed by Syrian government forces.

It's hard to say what most of Russia's estimated 20 million Muslims—around 14 percent of the country's population—think about President Vladimir Putin's decision to take military action against Islamic State militants (ISIS) and other opposition groups in Syria, but the move is fraught with dangers. The history of Islam in Russia is one of frequent confrontation, from the 19th-century uprising by Muslim rebels in the country's North Caucasus region to the separatist and then Islamist wars that devastated Chechnya in the mid-1990s and early 2000s.

Unlike Assad, who hails from the minority Alawite sect, Russia's Muslims overwhelmingly belong to Islam's dominant Sunni branch. This is something they have in common with the myriad opposition forces battling for control of Syria's war-torn cities. Putin may have been applauded by some for seizing the initiative in

Syria, but by backing Assad's mainly Alawite army, as well as its Shiite allies, who include Hezbollah and elite Iranian troops, he risks inflaming Sunni passions at home.

The Kremlin is deeply suspicious of independent Muslim organizations, and security services carried out a sweeping crackdown ahead of last year's Winter Olympics in southern Russia. "They consider everything and everyone that they do not control to be an extremist," says Harun Sidorov, head of the National Organization of Russian Muslims, an independent Islamic movement whose members have faced police pressure, including raids and arrests.

As many as 500,000 Muslims in Russia may indeed sympathize with ISIS, according to a cautious estimate by Alexei Malashenko, an expert on Islam at the Carnegie Moscow Center think tank. "These are people who want to build a state founded on the principles of Islam," he says. "Many of them say ISIS is fighting for social justice and for fair government. Others like the fact that it is fighting against the West."

ISIS has mounted a slick Russian-language recruitment campaign that includes a magazine, *Istok*, and a dedicated propaganda channel, Furat Media. According to Putin, 5,000 to 7,000 people from Russia and other former Soviet states, many of them Chechens, are fighting for ISIS in Syria. Earlier this year, Islamist militants in the mainly Muslim North Caucasus pledged their allegiance to ISIS's leader, Abu Bakr al-Baghdadi. In response,

BY  
**MARC BENNETTS**  
[@marcbennetts](https://twitter.com/marcbennetts)





**HOUSE OF GOD:** Gainutdin, left, and President Putin presided over the opening ceremony of a new mosque that can house 10,000 worshippers in September.

Chechnya's pro-Kremlin leader, Ramzan Kadyrov, appealed to Putin to send Chechen fighters to Syria to "destroy" what he called ISIS "devils."

Muslim criticism in Russia of Putin's Syria adventure has been largely restricted to furious social media posts and online articles. So far, there has been little sign that Russia's Muslims are about to take to the streets against the military campaign. Both experts and government critics say this reluctance to speak out is partly due to a fear of the possible consequences of dissent, rather than an indication of tacit approval. "Muslims in Russia have been frightened into silence by the repressive policies that have been methodically carried out throughout Putin's rule," says Airat Vakhitov, a former imam from Russia's Tatarstan region, who was arrested in 2005 on what he says were trumped-up terrorism

**"MUSLIMS IN RUSSIA HAVE BEEN FRIGHTENED INTO SILENCE BY THE REPRESSIVE POLICIES THAT HAVE BEEN METHODICALLY CARRIED OUT THROUGHOUT PUTIN'S RULE."**

charges in Russia. He was later released for lack of evidence and now lives abroad.

Kremlin-loyal Muslim leaders have offered their unwavering support for Russia's airstrikes in Syria. On October 2, the long-serving head of Russia's Council of Muftis, Ravil Gainutdin, issued an urgent appeal for calm, calling on his fellow Muslims to not "politicize" the Kremlin's involvement in the conflict. Sprinkling his statement with verses from the Islamic holy book,



the Koran, Gainutdin also expressed the hope that Russia's military action would not lead to interfaith strife among the global Islamic community, or *ummah*. Gainutdin's comments were echoed by subordinate muftis across Russia.

The sole dissenting voice was that of Nafigulla Ashirov, a co-chairman of the Council of Muftis, who in early October told the BBC's Russian-language service that there should be no foreign "interference" in Syria's civil war. But Ashirov, a radical figure who in 2001 expressed his enthusiastic support for the Taliban, quickly backed down. In subsequent interviews, he refused to comment on Russia's airstrikes, and he tells *Newsweek* he has "no opinion whatsoever" on the subject.

While the United States says the vast majority of Russia's airstrikes in Syria have mainly targeted the "moderate" opposition to Assad, on October 6 the independent Syrian Observatory for Human Rights said Russian jets hit ISIS fighters near the ancient city of Palmyra, where the jihadi movement destroyed a 2,000-year-old Roman arch of triumph earlier this month. Both ISIS and the Nusra Front, an Al-Qaeda offshoot in Syria that has also been targeted by Russian missiles, have since urged Muslims to wage jihad against Russia.

"It is likely there will be a response from North Caucasus-based militants with links to ISIS," says Gregory Shvedov, editor of Caucasian Knot, an independent online news service. "They certainly have the capacity to set up attacks in Moscow and other big cities."

On October 11, shortly after *Newsweek* spoke with Shvedov, counterterrorism agents in Moscow detained 12 people they said were planning a bomb attack on the city's public transport system. Security officials said at least one of the suspects, a Chechen, had received training at an ISIS camp in Syria. But the details of the alleged bomb plot were hazy and often contradictory. The timing of the arrests—they came shortly after Putin had spoken on national TV about the need to eliminate Russian ISIS fighters in Syria before they returned home—also sparked speculation that they may have been part of a propaganda operation to bolster public support for the Kremlin's military campaign.

Whatever the truth, news of the arrests frayed nerves. Although Moscow has not had an attack since 2011, when over 30 people were killed in an Islamist suicide bombing, more than 3,000 Russians have lost their lives in attacks Russia considers terrorism since Putin came to power in 2000. But if a new wave of violence is coming to Russia, there is little that counterterrorism officials can do to prevent it, says Andrei Soldatov, a journalist and author who is an expert on the Russian security services. "Russia's counterterrorism system was designed in the mid-2000s, and its main goal is to prevent groups of militants from getting control over regions or important facilities, not to prevent terrorist attacks," he tells *Newsweek*. He also described

## "THEY CERTAINLY HAVE THE CAPACITY TO SET UP ATTACKS IN MOSCOW AND OTHER BIG CITIES."

security measures in place in Moscow and other Russian cities as "largely dysfunctional."

Back at the mosque in Moscow, a middle-aged woman in a headscarf frowns when I ask her opinion of the Russian missiles raining down destruction on Assad's Sunni opponents. "I have very strong views on that," she says, "but I wouldn't like to state them out loud." Then she pauses. "But this is very dangerous," she whispers. "Very dangerous, indeed." ■

**BURNED OUT:** A bomb on a trolleybus in the southern city of Volgograd killed 16 people in December 2013, before the Sochi Olympics.





## Be Nice to Ice

THE ANTARCTIC ICE SHELVES COULD COLLAPSE BY 2100, UNLESS A LOT CHANGES

Later this year, world leaders will come together for a U.N. meeting in Paris to discuss how to save the planet from catastrophic climate change. New research out of the Woods Hole Oceanographic Institute gives them another metric to see exactly how much is at stake. A paper published in October predicts that the surface melting of ice shelves in Antarctica will double by 2050—whether or not emissions change. But by 2100, our climate policies will be the difference between the Antarctic ice shelves disappearing into the sea or not.

Ice shelves are massive, floating plateaus of frozen seawater that jut out from the continent and function as blockades, holding back the giant continental ice sheets. In their absence, the glaciers on the continent would accelerate their march into the sea. Under a business-as-usual emissions scenario, the next 85 years of warming could bring a melt rate high enough to trigger the loss of ice shelves across the continent. “Imagine you have a sink full of water, and you remove the drain plug. The ice shelves are the drain plug,” explains

Luke Trusel, lead author on the recent study.

Trusel and his colleagues found that if emissions continue at the current pace, Antarctica’s ice shelves would be losing around 600 gigatons of melt water per year by 2100. “That’s the equivalent of eight years of Niagara Falls running continuously,” he says. The melt rate would be at or above the point where ice shelves (like the Larsen A and Larsen B shelves) have historically destabilized and collapsed.

But, Trusel says, if world powers commit to peaking global emissions

around mid-century and reducing them steadily thereafter, this cataclysmic scenario could be avoided. In that case, Antarctica’s ice shelves would lose just over 200 gigatons per year, staving off total collapse.

It’s a highly feasible goal—Trusel calls this a “middle-of-the-road scenario” for climate policy, since some experts and governments have advocated for much faster and steeper peak-and-decline emissions scenarios. In other words, this apocalyptic ice melt story has a silver lining. Sort of.

BY  
ZOË SCHLANGER  
@zoeschlanger

SOURCE: NATURE GEOSCIENCE, WOODS HOLE OCEANOGRAPHIC INSTITUTE



## THE GENERALS' ELECTION

# November voting will show if Myanmar's march to democracy is real

**KYAW WANNA SOE**, a 40-something newspaper distributor in downtown Yangon, Myanmar, was twitching anxiously. While speaking, he wiped his brow and shifted in his chair. It was summer in Yangon, and that unholy union of heat and moisture was reaching a suffocating climax.

It was unclear whether his discomfort was a result of the soaring temperatures or provoked by contemplation of his country's future. Asked what ambitions he harbored for Myanmar's upcoming general elections, he meekly responded, "I just hope they happen without any problems."

"There are a lot of tensions right now," he continued, pointing to front-page images of protesting students. "So if something goes wrong..." His voice trailed off while he surveyed the maze of newspapers littering his shop floor. "I'm worried for my business."

While many are optimistic about the November 8 election, others worry that if there are problems with the vote, it could undermine progress made by Myanmar thus far. People like Kyaw Wanna Soe have not forgotten the ruling elite's capricious past, particularly the 1990 general election. It was considered the country's last relatively free and fair one, when the newly formed National League for Democracy (NLD) party, led by Aung San Suu Kyi, won 80 percent of the seats in the parliament. The military regime annulled the results, and Suu Kyi was placed under house arrest.

For half a century after the military coup in 1962, Myanmar, formerly known as Burma, stagnated under a dictatorial policy called "the Bur-



mese Way to Socialism." It has been only five years since the country began making serious changes, easing up on the seal that kept it isolated.

President Barack Obama hailed the gradual opening as a diplomatic coup, the result of a "carrot and stick" U.S. policy of dropping or imposing sanctions as Myanmar's internal situation

BY  
**ADAM RAMSEY**  
[@aporamsey](https://twitter.com/aporamsey)

**NOT SO PEACEFUL:** Buddhist monks joined a protest in February demanding that holders of temporary IDs known as “white cards,” who are mostly Rohingya Muslims, be denied the right to vote.



evolved. In November 2012, Obama became the first U.S. president to visit the country.

Now the government promises a free and fair election. It will be a test of whether the country moves closer to democracy or remains a military kleptocracy characterized by cronyism.

There are several parties running for the parliament’s upper and lower houses, but most of the attention is focused on the two major ones: the NLD, headed by Nobel laureate Suu Kyi, and the incumbent Union Solidarity and Development Party (USDP), led by President Thein Sein.

“It’s certainly important, and it’s shaping up to be the fairest and most inclusive [general election] since 1990,” says David Mathieson, the senior researcher with Human Rights Watch in Yangon. “But,” he adds, “there are still major caveats that need to be factored in.” The lack of reform of the constitution of 2008 is one such failure. It was drafted by the old military junta and passed in the aftermath of the deadly Cyclone Nargis. One of the most contentious points is Article 436, which requires a supermajority of more than 75 percent to amend the constitution. “I would call this a 75 percent election, because 25 percent of the seats are guaranteed to the military,” Mathieson says. “They have stated they are the guardian of the constitution.... They have made it very clear they won’t countenance any changes.”

A sign of that came in August, when the USDP ousted party chairman and presidential hopeful Shwe Mann in a surprise overnight move. He had disagreed with party members over constitutional change, among other things.

Another controversial article of the constitution bars anyone with a foreign spouse or child from holding the highest office. Suu Kyi’s late husband was a British citizen, as are her children, and critics interpreted that article as tailored to exclude her. Suu Kyi still sounds confident. At a campaign rally just north of Yangon, she told the crowd, “Make no mistake: Whoever the president is, I will be the leader of the NLD government.”

There is another big factor weighing against a free and fair election: the many citizens who cannot vote. There are bureaucratic problems, and the Union Election Commission—which oversees registration, campaigning and polling—is badly stretched, says Myat Thu, director of the Yangon School of Political Science. “I’ve been told by people that names are being repeated [on voting rosters], while others are missing. Sometimes a single name appears five times,” he says.

Several areas along Myanmar’s border regions

are still subject to violence, part of a conflict involving a plethora of ethnic armed groups, now in its 67th year. A two-year-long attempt to reach a nationwide cease-fire has just ended in disappointment, with only eight of the 15 invited groups willing to sign. Nearly 600 village districts nationwide will have their voting canceled.

Meanwhile, in western Myanmar, the persecution of the Rohingya, a Muslim minority group, has raised doubts over the sincerity of the government’s transition. Myanmar does not consider the Rohingya citizens, referring to them as Bangladeshis and revoking many of their rights. This has left some 140,000 people displaced and wholly

**“I WOULD CALL THIS A 75 PERCENT ELECTION, BECAUSE 25 PERCENT OF THE SEATS ARE GUARANTEED TO THE MILITARY.”**

disenfranchised. Obama, while praising the country’s “courageous process” of political reform, has warned that “Myanmar won’t succeed if the Muslim population is oppressed.”

Myanmar’s political elites, including Suu Kyi, were noticeably silent during a Rohingya refugee crisis earlier this year. Now the Rohingya face more discrimination than ever, fueled by the rise of Buddhist nationalist groups like the Association for the Protection of Race and Religion, known locally by the Burmese acronym Ma Ba Tha.

The Ma Ba Tha, led by hard-line monks, has stoked sectarian tensions in this overwhelmingly Buddhist country. Last year, it proposed four so-called “protection of race and religion” laws condemning Muslims that were swiftly pushed through the parliament. “My view is that [the government has] simply just stood back, allowed [the Ma Ba Tha’s rise] to happen and are now utilizing that sentiment for themselves,” says Mathieson.

In recent months, state media have carried numerous reports of senior government officials making offerings to senior monks, and Ma Ba Tha figures have urged the movement’s supporters not to vote for the NLD.

Suu Kyi, who spent 15 years under house arrest, told supporters she is focused on reconciliation. “The past should be something from which to take lessons,” she said, “not something that ties us to anger and grudges.” ■



## DICEY PROPOSITION

# Hillary Clinton had a great debate in Las Vegas, but she needs to win Nevada if she's going to be the nominee

**THE EAST** Las Vegas neighborhood of Southridge is less than a 10-minute drive from the Strip but has none of its glitz. Blocks of modest ranch-style homes are fronted with scruffy patches of shrubbery and the white pebble lawns that are a stand-in for grass all across the arid Southwest. Caucasians are a plurality, but not a majority, in this Latino-heavy working-class neighborhood. This is not the Vegas that draws 40 million tourists a year. But for Hillary Clinton, Southridge and similar Vegas neighborhoods are central to her 2016 presidential ambitions.

Despite her good performance in the first Democratic debate, the latest polling shows Bernie Sanders, Vermont's liberal curmudgeon, closing in on Clinton in Iowa's first-in-the-nation caucuses and surpassing her in New Hampshire, which holds the first primary. That's heightened the focus on the next state on the 2016 primary calendar, which becomes a must-win firewall if Clinton stumbles in one or both of those places. Thanks to the dogged advocacy of longtime Democratic Senate leader (and native Nevadan) Harry Reid, that state is Nevada. How she does here could not only determine the nomination but also offer some sense of how she might do in a general election. This is a state that went for Bill Clinton twice, George W. Bush twice and Barack Obama twice—always by thin margins. Nevada isn't the nation's only swing state, but it's an important one.

Hillary's Nevada assault has already begun, based out of places like the single-level flophouse on Bonita Street in East Las Vegas used by Clinton staffers. It looks like any other home in Southridge, aside from the bright blue signs plastered along the exterior with the familiar "H" logo. On the Sunday before the Democratic candidates' first debate, Clinton's legion of volunteers gathered here to go canvass the neighborhood.

The candidate herself wasn't flying in until the next day, but a capable surrogate was there to rev up the mostly young, mostly Latino volunteers. "This is where you hear the real stories of America," Joaquin Castro, an up-and-coming congressman from Texas, told the group. (His twin brother, Julian, Obama's secretary of housing and urban development, has been buzzed about as a potential Clinton vice presidential pick; he formally endorsed Clinton on October 15.) "And this is where you're going to make a difference today." Standard political pep rally stuff. But in this case, it also happened to be true.

Nevada has one of the highest proportions of Latino residents in the United States, 27 percent. And that's just one of the significant minority populations there—large numbers of blacks and Asian-Americans also call it home. Compared with snowy-white Iowa and New Hampshire, Nevada's ethnic potpourri is striking. And that's good news for Clinton, who has long-standing ties to the Latino and black communities, while

BY  
**EMILY CADEI**  
[@emilycadei](https://twitter.com/emilycadei)



JOHN LOCHER/AP



**DESERT STORM:**  
Sanders is polling well for the first few primaries, so Clinton hopes to slap him back with a strong showing in Nevada.



Sanders has spent the last half-century in Vermont, where Latinos make up just 1 percent of the population, tied for last in the nation.

Clinton's Nevada team knows those minorities are essential to its goal. State director Emmy Ruiz and organizing director Jorge Neri, both Latino, held the same positions for Obama in 2012. They are at the top of an operation of more than a dozen paid staffers and have been on the ground since May. Sanders, by contrast, just hired his first paid staffer in Nevada in early October. "It puts him at a huge disadvantage," says Las Vegas-based Democratic political consultant Andres Ramirez.

Of the four states voting next February, Nevada is inarguably the toughest to campaign in, and not just because of the heat and the scorpions. It holds caucuses, not regular primary elections, which require a great deal more time and motivation on voters' part. And many of the voters Democrats rely on—shift workers, minorities, single women—are low-turnout voters. Getting them to show up requires a huge effort.

Then there's the fact that Nevada has no tradition of caucusing. The first time the Silver State held a politically relevant caucus was in

2008, and the process wasn't smooth. Squabbles broke out over holding caucuses amidst the slot machines and 24-hour buffets of Las Vegas casinos. Vote counting was slow and delegate allocation contested. It may not be easier in 2014, given how "Nevada is such a transient population," says David Damore, a political scientist at the University of Nevada, Las Vegas. "You're always having to relearn [the caucus process]. You're always having to teach."

Clinton is building the organization to overcome those challenges. Not only are staffers and volunteers already conducting outreach in Clark County, which encompasses Las Vegas and is home to nearly three-quarters of the state's population, but they're also present in the state's more far-flung corners. That's a lesson the Clinton campaign learned in 2008, when Robby Mook, now the secretary's campaign manager, was her Nevada state director. Clinton won the popular vote among Nevada Democrats that year, but the Obama campaign proved savvy at playing the caucus game, turning out supporters in the less-populated precincts of north and central Nevada and, under allocation rules, earning more delegates. The same problem

**SCOOP DU JOUR:** Clinton is betting her strong ties to Latino and black voters will put her over in Nevada.



dogged her in several states that followed, and Clinton's lack of preparation for a delegate fight ultimately doomed her campaign.

This time around, the Clinton campaign is focused on winning over the entire state, not just the population centers in the south. In July, for example, senior staffers drove to Schurz, a tiny desert town of less than a thousand on the edge of the Walker River Reservation, to woo Native American leaders. "I can guarantee you that we have been there more in the last three months than any campaign, Democrat or Republican, has been there in the last five years," one Clinton aide boasts.

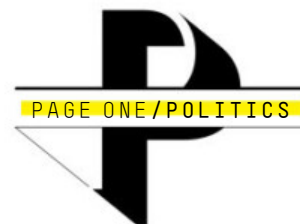
Organized labor is a more powerful force here than in many Western states. Nevada unions, however, are a different animal than most. With the state's large number of Hispanic workers, immigration reform is more important to Nevada labor than free-trade agreements like the Trans-Pacific Partnership. That's a blow to Sanders, who has tended to do well with old guard labor.

Labor's heaviest hitter is Las Vegas's Culinary Workers Union Local 226, which has more than 55,000 members—mostly in casinos, more than half Latino. Clinton failed to get their endorsement in 2008, which led to fierce infighting. Teacher unions allied with Clinton sued over holding caucuses in casinos, which they argued unfairly advantaged workers who were backing Obama. Unite Here, the union umbrella group that includes the culinary union, responded with a Spanish-language radio ad, claiming, in part, that "Hillary Clinton does not respect our people."

Clinton stands a better chance of getting the culinary union's blessing this time. It doesn't hurt that she recently came out in support of the union's top issue: repealing the so-called "Cadillac tax" on high-spending health insurance plans, a cost-containing measure included in the Affordable Care Act that will hit many union health benefits.

However, Annette Wright-DeCampos, a culinary union shop steward who works at Harrah's, said at a recent Las Vegas roundtable that she hears lingering concern from fellow members about Clinton's emails and Benghazi. And with his focus on inequality and taking on billionaires, Sanders may get some traction in a state where the contrast between glittering casinos and nearby poverty is stark.

University of Nevada, Reno, professor Eric Herzik suggests that because it puts a premium



on enthusiasm, the caucus system "actually makes up for some of the organization gaps [Sanders] might have." Sanders drew thousands to a rally in Reno in August, much as he's filled arenas elsewhere. Those who back him are intense about it, and "that's the type of person who shows up in a caucus," Herzik points out.

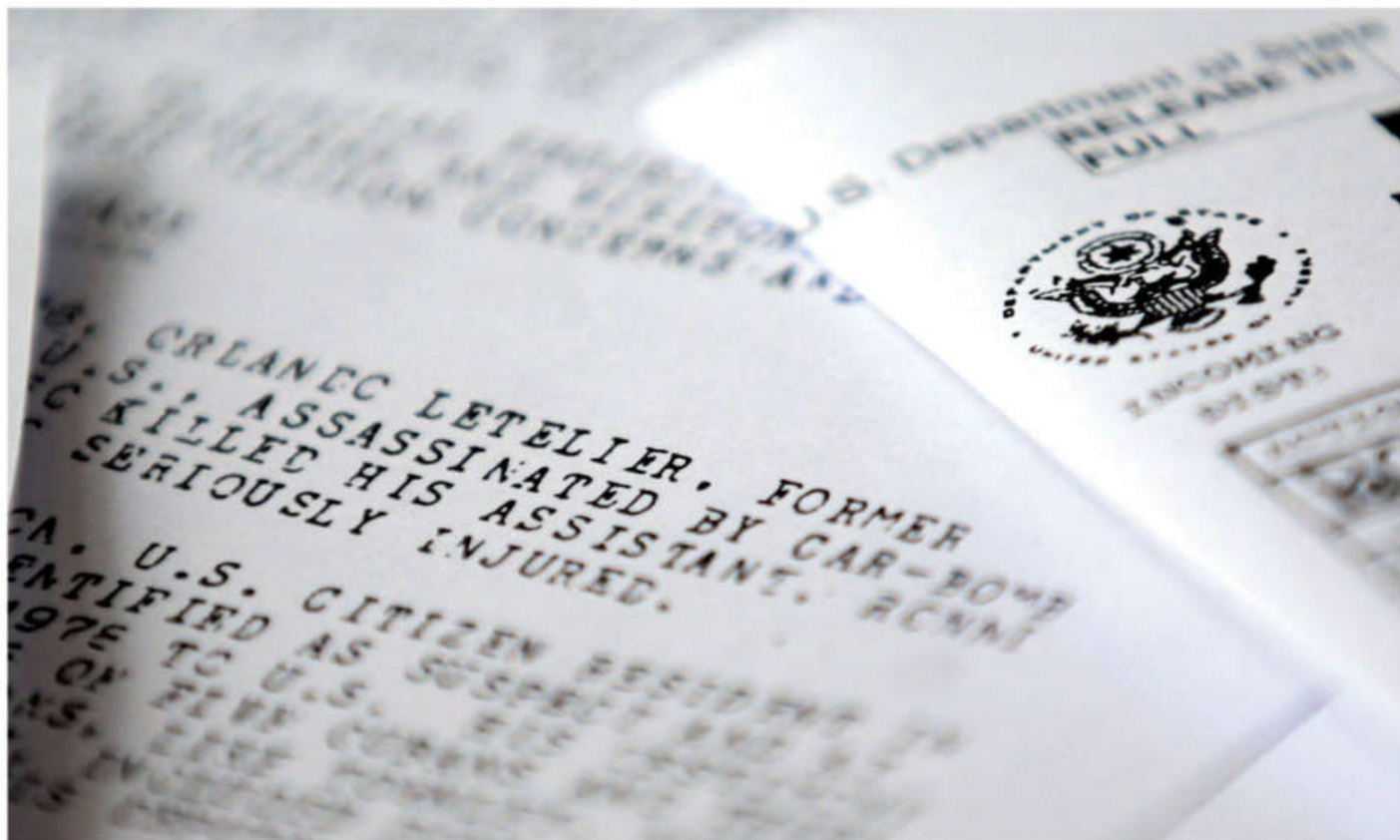
Still, Sanders will have to invest a lot more time and money in the state to be competitive,

## IN 2008, ONE UNION RAN A SPANISH-LANGUAGE RADIO AD, CLAIMING THAT "HILLARY CLINTON DOES NOT RESPECT OUR PEOPLE."

and it's not clear he's making that a priority. It's telling that the Vermont senator didn't hold any public events while he was in Las Vegas for the first debate—he met privately with postal union members—then jetted off to Los Angeles for fundraising the next day. Clinton, by contrast, made a shrewd appearance the day before the debate at the culinary union's protest in front of Donald Trump's Las Vegas hotel (allowing her to side with labor and chide the mogul). She closed the trip with an evening rally at a nature preserve in West Las Vegas.

With the setting sun painting the Spring Mountains pink behind her, Clinton bounded onstage at the outdoor amphitheater to appeal to the blend of Asian, Latino, white, young and old people in the crowd to support her in February. Nevada, she emphasized, was critical to Democrats' hopes of keeping the White House. Earlier in the day, she accepted the endorsement of the local International Union of Painters and Allied Trades. With union members lined up behind her waving yellow "IUPAT for Hillary" shirts, Clinton seemed in her element, her confidence returning after an underwhelming summer. "I'm feeling really lucky in Las Vegas," she said, beaming. ■





## MURDER, HE WROTE

For decades, the CIA knew Chilean dictator Augusto Pinochet gave the order to kill Orlando Letelier in Washington, D.C. Now the secret is out

**THERE IS AN** old saying: If you're going to attack the king, make sure you kill him.

In the case of Chilean dictator General Augusto Pinochet, five U.S. presidents—from Jimmy Carter to George W. Bush—had a potentially lethal weapon to use against him but never unleashed it. That is, until the State Department released documents in October containing compelling evidence from as early as 1978 that Pinochet gave the order to murder Orlando Letelier in Washington, D.C. By then, however, the king was dead; Pinochet died in his bed in 2006. At the time, he was under judicial investigation for human rights crimes, but he was never convicted.

On September 21, 1976, a Chilean agent planted a car bomb that killed Letelier and Ronni Moffitt, an American woman who was with him, as they drove down Massachusetts Avenue. Moffitt's husband, Michael, who worked for Letelier, was also in the car and survived. Letelier, a former ambassador to the United States, had served as a high-ranking official in the leftist government of President Salvador Allende, who was overthrown in a Pinochet-led coup in 1973. Exiled to Washington after spending a year in a prison camp, Letelier had extraordinary access to D.C. power circles and was the most influential voice in the U.S. opposing Pinochet's dictatorship.

BY  
**JOHN DINGES**  
[@jdinges](#)

FROM LEFT: FELIPE TRUEBA/EPA; AP

**BOMBSHELL:** Letelier, who had served in Allende's government, was killed by a car bomb as he drove through Washington with Americans Ronni and Michael Moffitt. Ronni was also killed.

An FBI investigation led to the 1978 indictment of several Chilean officers, including the head of Chile's Directorate of National Intelligence, General Manuel Contreras, and a group of anti-Castro Cubans who carried out the bombing. But Pinochet emerged from the investigation unscathed, and he agreed to hand over the directorate agent who built and planted the bomb, an American named Michael Townley.

As the FBI arranged to take Townley back to the U.S. to face charges, the CIA was mining its abundant sources among the military and right-wing civilians in Chile about the bombing. The agency had close relations with them because during the Allende regime it had worked with Chile's most rabidly anti-Communist organizations to undermine the socialist government and encourage its overthrow.

A CIA report dated April 28, 1978, and sent to Washington showed that the agency already had proof of Pinochet's involvement in the killing. "Contreras told a confidant he authorized the assassination of Letelier on orders from Pinochet," the report said, according to a newly declassified document.

A State Department document refers to eight separate CIA reports from around the same date, each sourced to "extremely sensitive informants" who provided evidence of Pinochet's direct involvement in ordering the assassination and in directing the subsequent cover-up. *Newsweek* showed the reports to special agent Carter Cornick, who was working for the FBI in Santiago, Chile, in April 1978. "As you may suspect, none of this was new to us at the time," he says.

Cornick and his partner Robert Scherrer are credited with solving the Letelier murder. Cornick is now retired and lives in Virginia, just outside of Washington. He says the information against Pinochet was "hearsay"—gleaned from

people who might talk to the CIA but would never appear in court. Formal charges against Pinochet were not possible, but there was another factor in the U.S. government's decision not to reveal what it knew. "The interests of the U.S., according to [the Department of] State," Cornick says, "were that Chile was a non-Communist country in Latin America and therefore no further punitive action against them was warranted."

In 1980, with the election of President Ronald Reagan, a Cold War conservative, there was a new ambassador to Chile, James Theberge, who thought along similar lines. According to a new document, Theberge criticized the damage

**"THE UNITED STATES COULD HAVE CHANGED HISTORY BY SIMPLY ACCUSING THE MAN GUILTY OF A CRIME COMMITTED IN ITS CAPITAL."**

caused by "punitive" measures against Chile during the previous administration of Jimmy Carter—a reference to the investigations, trials and pressure to obtain extradition of those indicted in the Letelier case. He instructed his staff to direct their efforts elsewhere, saying, "In my judgment and that of senior staff, the Letelier case offers no chance of success."

In the early 1980s, Chile was experiencing the first popular protest movement against Pinochet, and opposition groups on the left and in the center had united to push for a return to democracy. Public disclosure that the United States considered Pinochet guilty of a terrorist assassination would have had enormous impact in favor of the pro-democracy movement, according to Sergio Bitar, a former government minister and an exiled leader at the time.

Juan Gabriel Valdés, the Chilean ambassador to the United States, agrees. "It would have had a catastrophic impact on Pinochet," he says. "The







United States could have changed history by simply accusing the man guilty of a crime committed in its capital, which it had the complete right to do and the power to do it.”

The Republican-led State Department raised the issue again in the final years of the Reagan administration. The department was paying new attention to human rights, especially as a way to keep diplomatic pressure on the Soviet Union. Chile was still a dictatorship, but in 1987 Pinochet announced he would hold a plebiscite, with himself as the sole candidate, a move intended to prolong his rule for another decade.

The newly released documents show that Reagan’s secretary of state, George Shultz, was trying to convince the president that it was time for the United States “to work toward complete democratization of Chile.” Not surprisingly, Shultz’s main argument to Reagan was that another decade of Pinochet dictatorship “would be highly dangerous for Chile and the region as a whole; inevitably it would lead to serious polarization of the Chilean population and a significant strengthening of the large (and growing, thanks to Pinochet) Moscow-dependent communist party.”

The real surprise in Shultz’s memo, dated October 6, 1987, is what it said about Pinochet’s role in the Letelier-Moffitt killings. Shultz quoted from a report containing “what we [the CIA] regard as convincing evidence that President Pinochet personally ordered his intelligence chief to carry out the murders.” Pinochet also led the cover-up to hide his involvement from the U.S. investigation, the report continues, adding a new and chilling detail: Pinochet was considering “even the elimination of his former intelligence chief [Contreras].”

The CIA information given to Shultz is similar in scope and content to the reports the agency generated in 1978. But Shultz said that the new report was stronger. “The CIA has never before drawn and presented its conclusion that such strong evidence exists of [Pinochet’s] leadership role in this act of terrorism,” he told Reagan.

Shultz raised the possibility of formally

indicting Pinochet, assuming “more public sources of evidence” could be obtained. The hearsay nature of the information made legal action difficult, but the U.S. could have revealed it as a political statement. “This,” Shultz continued, “is a blatant example of a chief of state’s direct involvement in an act of state terrorism, one that is particularly disturbing both because it occurred in our capital and since his government is generally considered to be friendly.” However, for whatever reason, the White House demurred.

The opposition ultimately prevailed in the plebiscite with a “no” campaign against Pinochet. Chile held elections in 1990, and a new president, backed by the center-left Concertación alliance of political parties, restored limited democracy. But the generalissimo remained influential as head of the armed forces until 1998.

In October that year, there was another historic opportunity for the U.S. to announce what it knew about the Chilean general. Pinochet was detained in London on human rights charges associated with the Operation Condor assassinations,

## “THIS IS A BLATANT EXAMPLE OF A CHIEF OF STATE’S DIRECT INVOLVEMENT IN AN ACT OF STATE TERRORISM...IN OUR CAPITAL.”

including that of Letelier. President Bill Clinton ordered the declassification of 23,000 documents on Chile and human rights, but kept the Shultz memo and the CIA reports on Pinochet hidden.

While lamenting the long secrecy, Valdés, the Chilean ambassador, says he is deeply grateful to the Obama administration for quickly releasing the documents after he made a formal request on behalf of his government.

Reading them today, you can still see the markings on the documents from the 1998 review: “SECRET” and “DENY.” Now the words are crossed out. Decades after the CIA discovered the evidence of Pinochet’s guilt, it finally bears a simple, unambiguous stamp: “RELEASE IN FULL.”

**JOHN DINGES** is the author of two books on the Letelier assassination and other human rights crimes in the Southern Cone: *Assassination on Embassy Row* (Open Road) with Saul Landau and *The Condor Years: How Pinochet and His Allies Brought Terrorism to Three Continents* (The New Press).


## Names in the News

UP, DOWN AND SIDEWAYS

 @WisdomWatch



### RAND PAUL

 Candidate, followed by cameras for full day on campaign trail to prove he's not dropping out of race for Republican presidential nomination, calls publicity stunt at one point, on camera, a "dumbass live stream." Don't look for him to do much better in the poop-head debates or at that stupid-face convention.

### FOX NEWS

 Guest terrorism expert arrested for saying he once worked for CIA, facing charges of fraud and faking documents. Related: Bill O'Reilly facing arrest for faking being a newsman.




### REVENGE PORN

 Website Pornhub trying to curb proliferation of "revenge porn"—porn put up without consent of both parties. Victim protests at headquarters met with frantic cries of "We'll be out in five minutes!"



### RICK PERRY

 Now free from his futile run for president, former Texas governor hops in old Chevy for three-city road trip through Los Angeles, San Francisco and... wait, what was the third one? I can't remember now. *Oops.*



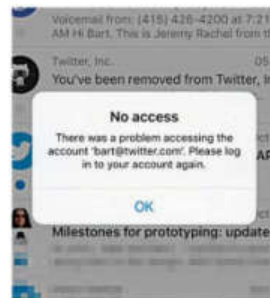
### FAMILY

 Aunt sues her 5-year-old nephew for hugging her too hard; claims she suffered broken wrist from exuberant embrace at child's birthday party. Remember, kids: lawsuits, not drugs.



### TWITTER

 Layoff victim discovers he lost his job by way of smartphone alerts after discovering that he can't access his company email. They were going to tell him in person, but they ran out of character.







# SOW WHAT?

By Betsy Isaacson

Illustration by Bill Mayer

THE FUTURE OF FARMING  
IS ALREADY HERE;  
THE PLANET JUST NEEDS  
TO EMBRACE IT





**RIGHT NOW**—at this very moment—there are over 7 billion humans crawling on the Earth. That's a lot of mouths to feed. To sustain them all, we've taken 40 percent of the planet's total landmass and turned it into cornfields and almond orchards, cattle ranches and orange groves, all to churn out the cereals, produce and meat that feed humanity.

Unfortunately, that's left us in a bit of a bind. The world population is expected to grow to 9.6 billion by 2050, and according to the Food and Agriculture Organization of the United Nations (FAO), if we want to avoid mass malnutrition, we're going to have to up our food production by 70 percent by 2050. The problem is most of the land we can work for food is already being cultivated. The rest is atop mountains, covered by desert sands or in Antarctica. The only potential farmland left would require slashing and burning the world's remaining rain forests. That means we're going to have to make some large-scale changes to how we farm.

It's not impossible. In fact, it's been done once before in living memory. Few people have heard of Norman Borlaug, but if you're seeking a revolution in farming, he's probably the first person you'll want to look up. In the mid-1940s, wanting to increase wheat yields in the highlands of south

central Mexico, Borlaug bred several high-yield, disease-resistant strains of semi-dwarf wheat well-suited to Mexico's mountains. Farmers who planted Borlaug's wheat saw yields increase immediately; these gains were especially evident when the crops were planted in soil treated with nitrogen fertilizer. The method caught on quickly, and by 1963 95 percent of Mexico's wheat crop was Borlaug's dwarf wheat. Between 1944 (the year Borlaug arrived in Mexico) and 1963, Mexico's wheat yields sextupled. Then Borlaug went to South Asia.

In the mid-1960s, South Asia was starving, mostly because the region's food production couldn't keep up with its population growth. Believing he could help, Borlaug began exporting his high-yield wheat to the subcontinent. He eventually moved there, spending 16 years supervising the first few plantings and harvests. The results were tremendous: After just five years, the wheat yields in India and Pakistan had nearly doubled. By 1974, both countries were self-sufficient in cereal production, and Borlaug's methods were spreading rapidly to the rest of South Asia and Southeast Asia. Famine had been averted.

But humanity can't keep coasting on Borlaug's green revolution—land is now at a premium in a way it wasn't during Borlaug's era. Time has also shown that the revolution was far from perfect; in his quest to feed the world, Borlaug encouraged monocropping (growing a single crop year after year on the same land, without diversification or rotation) and heavy use of nitrogen fertilizer made from petroleum, both of which can produce massive short-term gains in crop yields but in the long run make the land less fertile. In addition, Borlaug's focus on rice, corn and wheat as tools to prevent famine led him to ignore several crops that we now know are even more nutritious and produce even more calories per acre than those three: potatoes and sweet potatoes, for instance.



**TEAM GREEN:** Borlaug won the Nobel Peace Prize in 1970 for his contributions to improved farming and increased food production across the world.

FROM LEFT: MICHELINE PELLETIER/SYGMA/CORBIS; JOHN PRIOR/ALAMY



For better or worse, we eat the world Borlaug built. But now we need to make some changes to that world, so it can produce 70 percent more calories on the same amount of land. And we need to start with fruits and vegetables.

## The Fruit Skyscraper

**THE TABERNAS DESERT**, in southern Spain, is the driest place in Europe. In the 1960s, it was known primarily as a place filmmakers went when they wanted to film spaghetti Westerns; *The Good, the Bad & the Ugly* and *Once Upon a Time in the West* were both shot there. But then the land began to blossom, and today, the arid desert is where more than half of Europe's fresh vegetables and fruits are grown.

## TABERNAS'S MASSIVE GREENHOUSE CLUSTERS ARE VISIBLE TO THE NAKED EYE IN LOW-EARTH ORBIT.

The credit goes to greenhouses. The first few were built there in 1963, courtesy of a land distribution project spearheaded by Spain's Instituto Nacional de Colonización. Fruits and vegetables from those greenhouses, where the environment could be controlled and beautiful produce could be grown, consistently soon outsold comparable crops grown in open fields, bringing in a windfall for the previously impoverished citizens of Almería, the Spanish province that contains the Tabernas. That money was reinvested, the greenhouses were expanded—with inexpensive plastic sheeting

**+ DESERT TO TABLE:** Spain built greenhouses throughout much of the country's arid landscape and is now one of Europe's major exporters of produce.

replacing glass as the material of choice for the majority of the controlled environments—and today greenhouses cover 50,000 acres in the Tabernas desert, adding \$1.5 billion annually to the economy of Almería.

Tabernas's massive greenhouse clusters—visible to the naked eye in low-Earth orbit—have been touted as an eco-

nomie miracle, but they are more than that: They are proof of concept. Right now, only wealthy-but-land-strapped Europe uses greenhouses to grow a significant fraction of its fresh produce. But with the rest of the world quickly getting wealthier and more land-strapped, the Tabernas model may take off.





That's because from an environmental and land-use perspective, controlled-environment farming is a great idea. Fruits and vegetables grown indoors tend to have far greater yields per area than comparable produce grown outside. Put a roof and walls around produce, and most problems caused by weeds, pests and inclement weather vanish. Add technology like hydroponics—growing plants so the roots sit in a customized nutrient slurry instead of in plain old dirt—to the equation, and yields increase even more. Better yet, build a hydroponic rig that is modular, rotates and stacks—which means you can have several “stories” of produce growing atop the same ground (assuming the stacks all get sufficient light), where an outdoor farmer would be stuck with only one.

This “stacking” of plants can be taken to extremes. In 2005, Dickson Despommier, professor emeritus of public health at Columbia University, put up a website plugging “vertical farms,” a concept he'd invented with his students four years prior. In some ways, it's as simple as it sounds: “A vertical farm is a multiple-story high-tech greenhouse,” says Despommier. But there are a lot of challenges involved, from getting sufficient light to all the plants to keeping pests and diseases out of the crops to make sure they grow properly. “There's a lot of technical stuff and engineering that needs to be overcome, and that's why it wasn't done until it became necessary to do it.”

In 2011, a calamity in Japan made it necessary. The tidal wave that caused the Fukushima disaster wiped out most of the farmland near Sendai, a coastal area in the northern half of Honshu, the largest island of Japan. The Japanese government decided to jump-start a vertical farm building boom

**+**  
**THINK PINK:** Cress, an edible herb, is grown using just LED lights tuned to a pink spectrum. Despite having no sunlight exposure and no direct exchange of air with the outside, the plant still grows effectively in “pinkhouses.”

there in an effort to replace the lost land. Four years later, Japan boasts hundreds of vertical farms, greenhouses stacked high into multistory skyscrapers, where plants rotate daily to catch sunlight. Instead of porting dirt into the buildings, the plants grow with their roots exposed, soaking in nutrients from enriched water or mist.

Aeroponics, a companion technology to hydroponics, has taken off in Japan and is helping high-tech greenhouses produce remarkable yields remarkably quickly: Unlike hydroponic systems, where plants dip their roots in nutrient slurry, aeroponic systems spray the plants' deliberately exposed roots with a nutrient-laden mist. “The root systems grow much longer because they have to increase their surface area to absorb the same amount of nutrients,” explains

Despommier. That, in turn, makes the plants grow much faster.

Singapore, Sweden, South Korea, Canada, China and the Netherlands all now boast skyscraper farms similar in concept to Japan's. In the U.S., such farms have risen in Chicago, while Newark, New Jersey, and Jackson, Wyoming, both have contracts with private controlled-environment vendors to build their own.

But with vertical farms, at least as they're currently conceived, light remains a problem; the towers need to be narrow enough to let sunlight penetrate all the way through, or else builders must figure out a way to rotate the growing plants to make sure they all catch a healthy complement of sunlight. Or, perhaps, there's a simpler solution: Replace that sunlight with artificial sources of light energy, like light-emitting diodes.

In the U.K. and the Netherlands, in Boston and in Bryan, Texas, it's been done. "Pinkhouses," as they're sometimes called, are lit blue and red: Those are the spectrums of visible light best absorbed by plants. By using these colors alone, pinkhouses generate serious efficiency: In the wild, plants use at most 8 percent of the light they absorb, while in pinkhouses, the plants can use as much as 15 percent. In addition, because everything happens entirely indoors, the lights, temperature and humidity can be controlled to an extent not possible even in the most high-tech, sun-dependent vertical farms and greenhouses.

As a result, the plants grown in these pinkhouses grow 20 percent faster than their outdoor cousins, and need 91 percent less water, negligible fertilizer and no treatment with herbicides or pesticides. Currently, the LEDs keep the upfront costs of constructing pinkhouse very high, but LED prices are projected to drop by half in the next five years. Given that, perhaps we ought to be preparing for a future where the majority of our produce is grown industrially in LED-lined skyscrapers made of steel and poured concrete.

## Sweet Potato Relief

**CHEW ON THIS STAT:** In the U.S., as much as 40 percent of produce grown is never sold or eaten. The reason? It's too ugly.

Consumers won't buy imperfect fruit and vegetables, and grocery stores refuse to stock them. The demand for "pretty" produce means fruit and vegetable farmers need to make up for the cost of all that food they can't sell. As a result, the produce currently sold in groceries is just what can make for fat profit margins.

That's also why controlled environments, from pinkhouses in Boston to plastic-sheeted greenhouses in Almeria, are used overwhelmingly to grow

toes today sold fresh in stores are grown in greenhouses.

But controlled-environment farming is far less profitable for growers of staples. Rice, corn and wheat—the cereal grains that provide the world with about 50 percent of its calories—are all dirt-cheap, more or less regardless of appearance. The margins on those crops are thin, so any additional investment in innovation and production methods comes at an impossibly steep price. Staple farmers can see their profits by growing huge amounts of their crops on enormous swaths of land; economically, it doesn't make sense for them to try to replicate that profit model in greenhouses, so controlled-environment farming is unlikely to supplant the open field when it comes to our most important crops.

Increasing the yield of staple crops to the point where we can feed 9.6 billion people likely won't involve anything as glamorous as greenhouse clusters seen from space; it might be as simple as making the whole farming world more modern. "A lot of poor farmers in underdeveloped countries are still farming as though it's 10,000 B.C.," says Dan Glickman, former U.S. secretary of agriculture, now consulting with several nonprofits that hope to solve world hunger. "There's no crop rotation, no irrigation; people are still using animals for plows. Just exporting modern farming practices globally will do a lot to feed a lot more people."

Universal adoption of crop rotation in particular could be a game-changer. Without any intervention, fields

**IN THE U.S., AS MUCH AS 40 PERCENT OF PRODUCE GROWN IS NEVER SOLD OR EATEN BECAUSE IT'S TOO UGLY.**

fresh produce: Farmers who work in controlled environments can put out consistently pretty pieces of produce. They have a huge advantage in the current fruit and vegetable market, which values the look of the crop as much as anything. Moreover, with produce, freshness fetches a premium; the shorter a distance a piece of produce has to travel before it reaches your plate, the tastier it'll be and the more you'll pay for it. And controlled environments allow farmers to grow their produce right next door to where it's sold. That's why, even in the land-rich U.S., says Chieri Kubota, a professor at the University of Arizona's School of Plant Sciences, 40 percent of toma-

planted with staple crops over and over again eventually grow "exhausted": the plants eat up all the nitrogen in the soil, rendering it sterile. The most common solutions are to either introduce more nitrogen via fertilizer or to lay the field fallow until the soil recovers and crops can be grown again. Both options have significant costs, either monetarily



(fertilizer is costly, particularly for small farmers in rural areas) or in calories produced (fallow fields are aren't producing). But there's also a fairly straightforward alternative: Instead of leaving fields fallow while they recover, it's possible to plant certain crops—largely legumes—that will reintroduce nitrogen into the soil. In other words, by alternating every corn harvest with a harvest of peas or beans, a field need never lie fallow.

Moreover, diversifying crops can add much-needed nutrients to most local diets. In 2008, Joel Bourne, agronomist, journalist and author of *The End of Plenty*, went to Malawi to assist aid workers in introducing crop

keeping the costs of things like water and fertilizer flat—and even sometimes decreasing expenses. Ting and his fellows map fields, figuring out which locations produce the highest yields and then gathering key data about those spots: everything from soil pH and water levels to mineral content in the ground. With this information, Ting and other

## **“A LOT OF POOR FARMERS IN UNDERDEVELOPED COUNTRIES ARE STILL FARMING AS THOUGH IT'S 10,000 B.C.”**

rotation to local farmers. “People there now are so dependent on maize,” Bourne says. “They eat this white corn porridge that gives them the bulk of their calories, but it's very low in other types of nutrients, so getting farmers to plant legumes, pigeon peas and ground nuts helps us boost nutrition in the area.”

Another, more blue-sky option is an overhaul of our global dietary make-up. Compared with other potential staples, wheat, rice and corn don't produce very many calories per acre; corn yields 7.5 million calories, rice 7.4 million and wheat a mere 3 million. Sweet potatoes, meanwhile, can produce 10.3 million calories per acre, grow in poor soil and tolerate irregular rainfall. Potatoes (which, despite the name, aren't related to sweet potatoes) produce 9.2 million calories per acre, grow in any well-drained soil and can tolerate frost. Both have bona fides as staple crops—the humble potato, for example, got Europe through the Industrial Revolution's population boom, while for a long time the sweet potato served as the primary staple for both native Hawaiians and the Maori people of what is now New Zealand—but they were sidelined by Borlaug and his disciples during the green revolution in favor of wheat, rice and corn.

Given the calories-to-acres ratio we're going to have to get to if we want to feed future generations, potatoes and sweet potatoes are due for a renaissance. Indeed, in places where arable land is scarce, it's already begun: The Kenyan government, working with the agricultural nongovernmental organization One Acre Fund, is encouraging farmers to plant sweet potatoes instead of maize, while the Chinese government has asked its citizens to make potatoes part of the national diet. Even the United Nations has begun putting its weight behind tubers; in 2008, the potato was declared the “food of the future,” and today the U.N. runs a fund specifically to support potato farmers around the world.

### **Techie Tractors**

**UNTIL THAT TUBER REVIVAL** goes global, efficiency will be the main game. Almost half of the world's supply of cereals (wheat, rice and corn, as well as less popular grains like sorghum and barley) is grown in the U.S., India and China. In all three nations, data-driven farming is on the rise, along with new fields of study and new careers for those willing to crunch a lot of numbers.

K.C. Ting, head of the University of Illinois at Urbana-Champaign's Department of Agricultural and Biological Engineering, works with open-field farmers (those who plant out under the big blue sky) to increase yield while

“AB engineers” can help farmers plan where to till and where to spray water, herbicides, pesticides and fertilizer. On larger farms, they can automate some or all of these processes (tilling, spraying, fertilizing) so they're done far more efficiently than they could be with human hands. Automating farm equipment also helps the engineers collect more data—and year after year, as the data's collected, the farm gets more efficient.

Brian Scott, a farmer and occasional farm-life blogger residing in Indiana, grows “a little over 2,000 acres” of corn, popcorn, wheat and soybeans. (That's fairly large; the midpoint acreage of farms in the U.S. is 110.5.) He ticks off the high-tech tools he uses on his farm: tractors equipped with GPS and auto-steer that till straight every time (because “in a 10-to-12-hour day, it's hard for a human hand or brain to continually till a perfectly straight line”), a planter that “knows where it is and knows where it's been” so it never replants the same patch of ground, a fertilizer tube that does the same, pH tests for his fields, yield maps and yield histories of his soybeans and corn. He doesn't even have some of the hottest stuff out there (crop sensors, irrigation via smartphone), but Scott says the tech toys he does use have helped him increase yield while saving substantial sums of money.

But when asked if the yields of technophile American farmers will help alleviate global hunger in a world of 9 billion plus, Scott goes quiet. His answer, when it comes, is thoughtful. “People sometimes forget that if we grow 300 bushels of corn per acre”—almost twice last year's



record-breaking average—“that’s great, but what’s the price going to be?”

Scott fears that if overproduction of corn drops the price of corn too far, fewer farmers will find it worth their while to produce corn in bulk—which will lead to less corn being grown worldwide. As a result, he says, “those crops [won’t] necessarily get to the people in poor countries.” Financial incentives are key; “a lot of farmers have told me recently that the concept of feeding the world doesn’t resonate with them so much anymore,” says Scott.

## Meet Lab Meat

**THE COMPLEX INTERPLAY** between consumer demand, crop yields and grower incentives plays out prominently in what is probably today’s hottest Big Ag topic: genetically modified organisms. A lot of Scott’s crops are actually GMOs; much of his corn is Bt corn (poisonous to certain insects), and all of his soybeans are Roundup Ready (herbicide resistant)—it helps him keep his yields high. But recent changes in consumer demand for non-GMO products has pushed him to keep some of his crops unmodified. “Last year, I think almost all our yellow waxy corn was GMO, and this year it’s not, because the place that we take our waxy corn wants all non-GMO corn.”

But for those concerned primarily with preventing impending world

**+ SMART WATER:** Today, flood irrigation is common, but it is increasingly recognized as inefficient. Intelligent watering practices—drip irrigation, irrigation via smartphone—will help to maximize resources and raise output.

famine, the debate around GMO safety is overshadowed by an even more fundamental question: Will genetic modification help feed 9 billion people? Bourne says that though herbicide-resistant and pesticide-resistant GMOs have made farmers’ lives easier, “We haven’t seen significant increases in corn, rice or wheat in the major breadbaskets of the world since around the year 2000, and that’s of great concern.”

One potential exception is C4 rice, being developed by the International Rice Research Institute in the Philippines. Normal rice has what is known as a C3 photosynthetic pathway, which turns sunlight into energy in a far less efficient

**THE SWEET POTATO FOR A LONG TIME SERVED AS THE PRIMARY STAPLE FOR BOTH NATIVE HAWAIIANS AND THE MAORI PEOPLE.**



way than the C<sub>4</sub> pathway used by, for example, maize. The idea, Bourne explains, is to develop a modified form of rice that uses the C<sub>4</sub> pathway; compared with an otherwise-identical paddy of unmodified rice, a paddy of C<sub>4</sub> rice would yield 50 percent more crop. All the components necessary for C<sub>4</sub> photosynthesis already exist in normal rice, but they are distributed differently and not as active. And the genetic pathway that could turn C<sub>3</sub> rice into C<sub>4</sub> rice still isn't entirely understood. "I've interviewed the head of the department at

Oxford University who is working on this, and she said we're still 20 to 25 years out from seeing this in the field," Bourne says. "So it's still beyond the horizon we need if we want to head off all food problems." (That said, the rice institute has recently started experimenting on the process using CRISPR, a newly developed gene-editing tool of unprecedented precision—many hope the technology will speed the process of understanding C<sub>4</sub> pathways in plants and designing and implementing a C<sub>4</sub> pathway for rice.)

According to Bourne, the most efficient way to head off our food problems is actually far less glamorous: We can stop eating meat. Right now, the FAO estimates a full third of available cropland is used for producing feed for animals; much more (about 26 percent of the Earth's ice-free surface) is used for grazing the animals themselves. Worse, meat's incredibly inefficient to produce: On average, animal protein production in the U.S. requires 28 calories of feed for every calorie of meat produced for human consumption.

Unfortunately, meat is a luxury item, and as more and more people are pulled from poverty in places like India and China, the demand for meat is increasing enormously; the FAO predicts that the global demand for meat will increase by more than two-thirds in the next 40 years.



**A MAN-MADE PLANET:** The thousands of greenhouses in Spain's Campo de Dalías are visible from space, as evidenced by this photo taken by the crew of the International Space Station.

the rain forest to plant more soy. And, of course, cutting down the rain forest releases carbon into the atmosphere which speeds up global warming which gives us less arable land which makes our upcoming land versus food problem all the worse.

One possible solution is to replace meat that comes from land with meat that comes from labs. At the Netherlands's Maastricht University, vascular physiology expert Mark J. Post is working on it. In 2013, Post produced the world's first lab-grown hamburger and fed it to food researcher Hanni Ruetzler and food

## IF WE WANT TO FEED FUTURE GENERATIONS, POTATOES AND SWEET POTATOES ARE DUE FOR A RENAISSANCE.

That growing demand might just be the death knell of the Amazon rain forest: China already owns half the pigs in the world, and as rural peasants there have begun to have more disposable income, the demand for pork has risen. However, growing feed for all those millions of pigs is land-intensive, and China's agricultural land is in bad shape: According to China's official news agency Xinhua, more than 40 percent of farmland in the country has already degraded due to over-intensive farming. So China has decided that instead of growing the pig feed it needs, it is just going to import it from places like Brazil. The demand for soybeans to feed China's hogs is driving a soy revolution in Brazil, which, in turn, is incentivizing farmers there to chop down

writer Josh Schonwald. Ruetzler praised the burger's flavor and consistency, but at \$330,000 per pop, it wasn't considered competition for cattlemen. This year, though, Post, bankrolled by Google co-founder Sergey Brin, brought the price down to \$80 per kilogram of meat, or a little over \$11 per patty—much closer to commercial viability.

But before it becomes a regular of-

## “THE ONLY PROBLEM HE HAD NOW WAS TO WORRY ABOUT ALLIGATORS IN HIS SWIMMING POOL.”

fering at McDonald's, Post's meat still needs to clear some hurdles. The burger is dry, says Ruetzler; Post's meat lacks fat, which on a cow-grown burger adds flavor and keeps the meat “juicy.” The growth medium for the ground beef is also a problem: Post's stem cells have thus far grown successfully into meat only when soaked in a serum made from fetal calf blood—an expensive (and definitely nonvegetarian) option. Post and his colleagues at Maastricht are currently working on solving those problems. Post estimates it'll be 20 to 30 years before lab-grown beef goes commercial in a big way. In the meantime, though, Amit Gefen, a bioengineer at Tel Aviv University, has already begun experiments in lab-growing chicken. In other words, it's not totally insane to imagine a near-future in which farmlands become, at least in part, home to high-tech food laboratories.


### Gators in the Swimming Pool

**IF HUMANS** can summon the will to bring the full brunt of all this technology and infrastructure to bear on feeding everyone, there will be an interesting side-effect. Up to 20 billion square miles of land previously devoted to food production will be freed up. Where once we ate 40 percent of the Earth's surface, in the future, ideally, we will eat a bit less than 5 percent. So what do we do with all that extra land?

Despommier tells the story of a Florida farmer whose 30 acres of strawberry fields were destroyed in 1992 by Hurricane Andrew. The farmer got money to rebuild his farm, but instead of replanting strawberries, he used the money to build a greenhouse: “He did this because he thought if he built the greenhouse strong enough it might survive the next hurricane, and he was right,” says Despommier. Moreover, tricked out with hydroponics equipment, the greenhouse was so efficient that 1 acre of indoor space could grow more strawberries than the farmer had previously been able to produce on 30 outdoor acres. This left the farmer with 29 acres of unused land.

The farmer decided to let nature reclaim the former strawberry fields. Soon the crop lands were wetland, “rewilded,” says Despommier. “I talked to him, and he said the only problem he had now was to worry about

alligators in his swimming pool.”

Despommier says he wants to be responsible for “rewilding” as much land as possible. The aesthetic and environmental benefits, he says, are desirable enough in and of themselves, but the real kicker is helping stymie or even reverse climate change. If every city could manufacture even 10 percent of what it ate, says Despommier, the subsequent rewilding “would mean a huge addition to hardwood forests that would suck up enough carbon to set the clock back to about 1980 in terms of atmospheric carbon.” And that's with only about 340,000 square miles of land reclaimed; imagine the climate gains brought by several billion miles of land rewilded—and all with food to spare. 





**GROWING UP:** A worker harvests fresh produce from a tower at Sky Greens, a vertical farm in Singapore that grows leafy vegetables in three-story-high frames stacked inside greenhouses.







JUMP



# TRUMP'S BIG DUMP

THE MOGUL MADE HIS NAME IN  
ATLANTIC CITY BUT LEFT RUINS BEHIND  
BY NINA BURLEIGH



# IN

**THIS CITY** built on lucky streaks and last chances, Donald Trump is gone but not forgotten. He remains a totemic presence high above the Atlantic City boardwalk even though he no longer owns the hotels bearing his name, having lost the last one six years ago. Between the onion domes of the Taj Mahal hotel, the word *Trump* is still visible, even to ships at sea.

Inside the Taj, one of three casinos he once owned, shoppers can still browse the Trump Exchange store, which sells all Donald Style, from branded apparel to a dinner table set with gold charger plates and crystal glassware. A black-and-white blowup of the Donald, circa 1980, with windblown hair and firmer jaw, holds pride of place behind the cash register, beneath a bit of his CEO wisdom embossed on the wall: *I like thinking Big. You have to think anyway so why not think big? D. Trump.*

Atlantic City hasn't forgotten Trump, and the Republican front-runner for president can't forget Atlantic City, where his casinos employed thousands and where his companies filed for four bankruptcies between 1991 and 2009. By then, the real estate mogul's share in Trump Hotels and Casino Resorts had already dwindled. He resigned from the board, retaining just a 10 percent stake. His three casinos were his in name only. Today, only one of them, the Taj, still bears the Trump brand.

When asked about Atlantic City, Trump says the iconic resort town is "a disaster" that collapsed just before his timely exit, which is surely true. In the town on which the Monopoly game was based, riches did not trickle down. Many inhabitants are not passing Go: 39,000 people live in a city where unemployment is 13.8 percent, the 10th highest in the nation, and the mortgage foreclosure rate is America's highest.

Trump has been vigorously spinning his companies' bankruptcies as evidence of his business acumen. "I had the good sense, and I've gotten a lot of

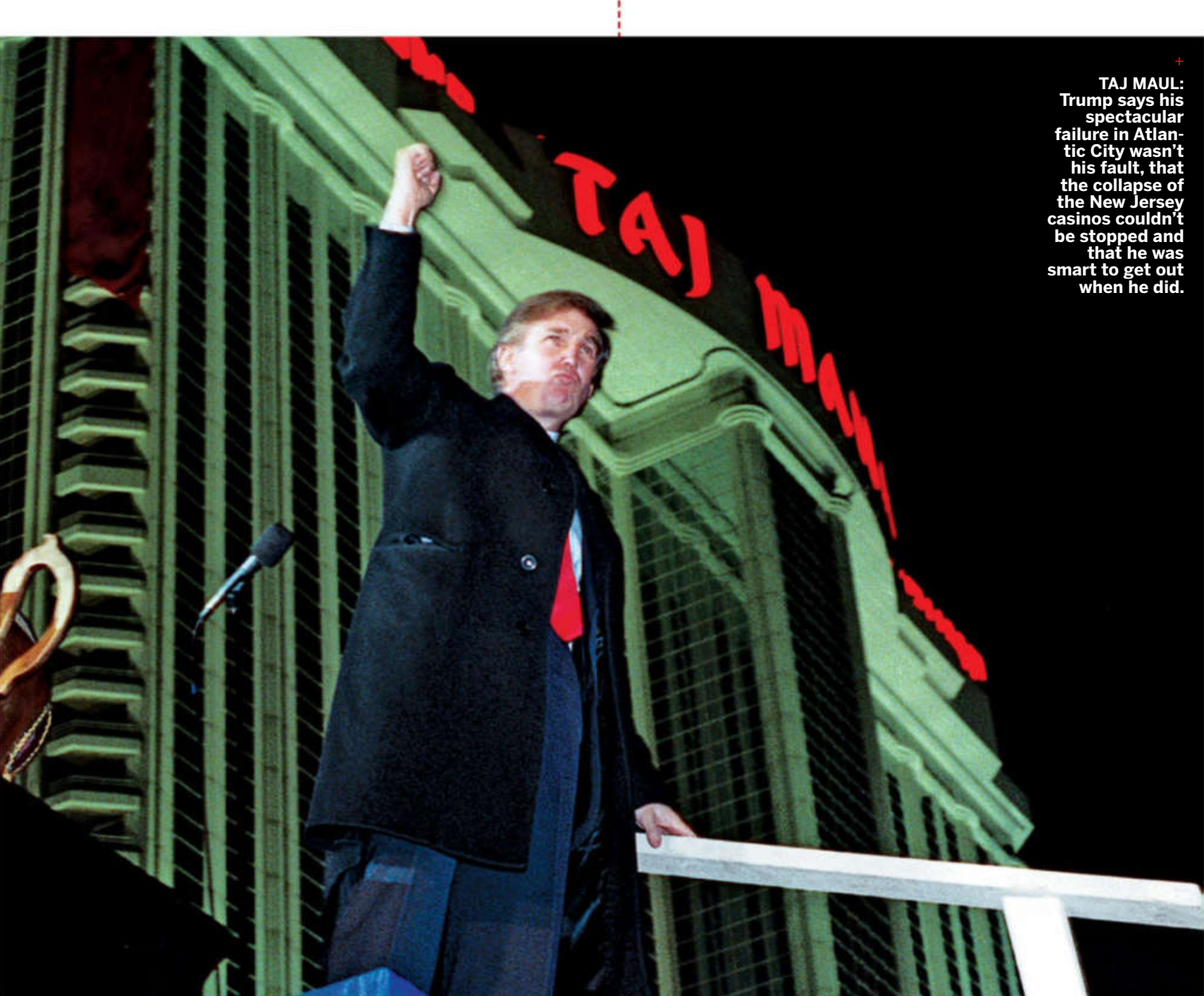


credit in the financial pages—seven years ago, I left Atlantic City before it totally cratered,” he boasted in the first GOP primary debate. “And I made a lot of money in Atlantic City, and I’m very proud of it.”

Today, Trump is running for president, he says, to make people rich. How he fared in Atlantic City suggests a businessman savvy enough to build a temporary empire but one whose bankruptcies and eventual exit caused considerable pain for many people. While America knows Trump through his reality shows and golf courses, the residents here know him as a boss and civic figure, and their perspective may be the best available assessment of Trump's claims that he can, as he says, “make America great again.”

Atlantic City attracted Trump and more established casino operators—Caesars, Harrah's, Bally's and Mirage Resorts—because New Jersey voters passed a constitutional amendment in 1976

CHARLES REX ARBOGAST/AP; PREVIOUS SPREAD: MARK MAKELA/REUTERS



**TAJ MAUL:**  
Trump says his spectacular failure in Atlantic City wasn't his fault, that the collapse of the New Jersey casinos couldn't be stopped and that he was smart to get out when he did.

**WHEN TRUMP  
WALKED THE BOARDWALK,  
PEOPLE APPLAUDED.  
POLICE CRUISERS  
ACCOMPANIED HIS LIMO,  
FORE AND AFT.**

legalizing casino gambling. Politicians promised gambling would pay for schools and roads, not just in the ailing seaside city but across the state. At the time, only faraway Nevada offered casino gambling, and Atlantic City was a short drive from many cities in the densely populated Northeast.

When Trump snagged his first Atlantic City casino license in 1982, there were questions about the size of his fortune, just as there are now. According

to a biography by financial journalist Timothy L. O'Brien, *TrumpNation: The Art of Being Donald*, the then-36-year-old's wealth was propped up by loans from his developer father. (Trump sued O'Brien, and the long litigation ended with the case being dismissed.) Today, Trump claims a net worth of \$10 billion, while *Forbes* says it is more like \$4 billion. Whatever his true worth was, in the '80s and '90s Trump's New York flash gave Atlantic City a big PR boost. He brought glitzy high rollers, big-time boxing and celebrities to town. When Trump walked the boardwalk, people applauded. Police cruisers accompanied his limo, fore and aft.

In 1991, the Trump Taj Mahal Casino, which had opened just a year before, filed for bankruptcy. Trump had financed it with \$900 million in junk bonds. Although the company—and not Trump personally—filed for bankruptcy, he unloaded his



Trump Princess yacht, his Trump Shuttle airline and stakes in other businesses.

The Taj bankruptcy hit Atlantic City's small businesses much harder. Trump already had a reputation for being a very tough negotiator with suppliers—an echo of his campaign promise to negotiate the best trade deals for America. Contractors were so accustomed to getting paid cents on the dollar that they habitually built in an extra percentage, according to one Atlantic City bankruptcy lawyer.

J. Michael Diehl, who owns Freehold Music Center, sold Trump eight Yamaha grand pianos for around \$100,000. “He put out a bid for pianos about a year before the Taj opened. I won the bid. I delivered the pianos, and I waited and I waited to get paid. And finally I heard from them that I had three choices: to accept 70 percent of the bid or to wait until the casino could afford to pay the bill in full. Or I could force them into bankruptcy with everybody else and maybe get 10 cents on the dollar. I took the 70 percent, and I lost 30 percent.”

Talking to Philly.com earlier this summer, Diehl said, “I’m not going to vote for him, that’s for sure. That’s a crude way of doing business.” Representatives at Trump’s company declined to comment on Diehl’s account and did not return calls for this story.

New Jersey state Senator Jim Whelan, Atlantic City’s mayor back then, and other sources who asked not to be named say Trump had a bad reputation among vendors even before the bankruptcies. “The fact is, there were a lot of small contractors and vendors who got hurt, who went out of business because Trump did not pay contracts on time,” he says.

Small vendors who grappled with delayed or lower payments as a business practice then became the unsecured creditors in the bankruptcies. In any bankruptcy, small creditors are forced to accept court-ordered percentages of what they are owed. New York bankruptcy lawyer Stephen Meister, who has represented Trump in other matters, defended Trump’s companies for seeking the best deals possible after bankruptcy. “A hallmark of any good reorganization plan is ‘shared sacrifice’ among all the stakeholders,” Meister says. “That is really what bankruptcy reorganization is all about. Everyone swallows their fair dose of the medicine. And Trump certainly swallowed his fair dose. He paid millions and gave up the yacht he had bought from the Sultan of Brunei.”

In addition to Trump’s financial problems that led to the Taj bankruptcy, in the ’90s Atlantic City began to face increasing gambling competition from all over the country—Indian casinos, riverboat gambling, horse tracks that added slots and gaming tables. Most Americans didn’t need to travel far to gamble, and Vegas posed new competition by transforming its reputation from a mob haven into an adult as well as family-friendly playground.



## **TRUMP HAD A BAD REPUTATION AMONG VENDORS EVEN BEFORE THE BANKRUPTCIES.**

In the face of all that, Trump’s companies filed for three more bankruptcies, in 1992, 2004 and 2009. Trump’s serial bankruptcies stood out even in the increasingly tough Atlantic City casino business. The flurry of bankruptcies by Trump’s companies was different from that of other casino owners in Atlantic City, says gaming industry analyst Christopher Jones, managing director of North American research at Union Gaming Group, a Las Vegas-based investment bank focused on the global gaming industry. “The majority of the other [businesses] did not go bankrupt four times. Relative to his peer group, the properties weren’t as well-maintained as the others, which helped his decline.” Jones’s bottom line: “Trump didn’t do Atlantic City a lotta good in the later years.”

When business was booming, casino industry employees in Atlantic City enjoyed personal and family health insurance and retirement benefits. But the spate of bankruptcies—Trump’s and, more recently, others’—washed away that stability. In 2014, Atlantic City lost 6,000 casino jobs in a matter of weeks, adding up to more than 10,000 for that year. The federal government had to pump in nearly \$30 million in emergency employment-assistance funds, and the state of New Jersey set up special assistance centers to help the unemployed get relief and hunt for new

FROM LEFT: WAYNE PARRY/AP; MARK MAKELA/REUTERS

jobs. “Frankly, you can’t fault Trump for the lost jobs, as much as I want to,” says Whelan, the former mayor. “He got out before the downturn.”

On the boardwalk and in the union hall, men and women who worked for Trump have a love-hate relationship with the mogul. Since Trump Entertainment—Trump-ian now in name only, and owned by investor Carl Icahn—filed for bankruptcy again last year, labor relations at the Trump crown jewel casino have imploded. Icahn is in a bitter fight with Unite Here Local 54, the union representing more than 11,000 workers, which has called him “a malignancy” in Atlantic City.

By contrast, Bob McDevitt, the union’s president, recalls a good relationship with Trump. “Trump never challenged whether the union was legitimate,” he says. “Icahn is trying to destroy the union.” Icahn has charged that the union cares more about its fees than workers’ health care and said union rules contributed to three recent casino closings. Trump has said he’d make Icahn his treasury secretary and point man for trade negotiations with China.

Like the other owners, Trump built casinos on the Vegas model—windowless caverns brimming with slot machines and gaming tables. Escalators at the Taj make it easy to enter, difficult to leave. Once you’re inside and acclimated to the glow of the pink chandeliers, it takes an effort to find exit doors. One can walk several hundred carpeted yards in many directions without seeing sunlight. No brochures direct visitors to attractions outside the casino, not to the aquarium, nor even to a local restaurant. It’s a grim scene.

The idea, of course, is to keep you in the casino, gambling. “They built these boxes,” says Ellen Mutari, an economics professor at Atlantic City’s Stockton University, who with colleague Deborah M. Figart spent seven years researching a book on the effects of the casino industry on Atlantic City. “The message was, ‘Stay in here, it’s safe. We will take care of you!’ There were very few positive effects for local business.”

Today, Trump the politician can draw visitors off the casino floor. I watched the second GOP presidential debate in September in a room in the Taj Mahal’s “Chairman Tower.” (The complex is divided into the casino and towers.) As the forum dragged into its third hour, I ordered room service. An attendant arrived 45 minutes later, apologizing for the delay, explaining that she was the only staff member serving two towers. “We didn’t staff tonight, because we thought it would be a quiet night,” she explained, then pointed at the debate on the screen. “But everyone’s inside their room, watching this!”

She refused to give her name because the staff is instructed not to talk to reporters about Trump, but she said she’d worked at the casino for 20 years and praised the Donald’s legacy. Thanks to the steady

work and benefits, she bought a house and expects to retire on a pension. “I remember once the union was negotiating with his people, and he called down from New York and said, ‘Give them what they want,’” she says. “I always liked him after that.”

Martin Wood, 80, has been minding his Wood’s Loan Office, a pawnshop on Atlantic Avenue, for five decades, and he takes a more skeptical view of Trump. The casinos were good for Wood, though. Each time a new casino opened, his business grew by 10 percent, Wood reckons. Gamblers dropped by every morning to pawn jewelry. If they got lucky, they returned at night to buy it back with their winnings. If not, after a couple of months Wood placed the keepsake among the other diamond engagement rings and pinkie rings under his glass counter. “I’m not impressed with Trump’s business acumen,” he says. “But then again, he’s probably not impressed with mine.”

Keith Harris, an administrative assistant at Asbury United Methodist Church’s community center, which feeds Atlantic City’s poor, says Trump had a good reputation even among the unemployed. “Every-



**ICAHN-OGRAPHY:** In the union halls, those who worked for Trump in Atlantic City have a love-hate relationship with the mogul, but all seem to scorn his pal, Carl Icahn, as a union-buster.

body did seem to feel he was a better owner, as far as employees were concerned. But lots of people do feel he jumped ship and left a lot of us high and dry.”

Over at the Absecon Lighthouse, New Jersey’s tallest, Milton Glenn is director of education. He manned the front desk at Trump Plaza from 1991 to 1996 and now scoffs at Trump for running on a jobs platform. “Yes, he made a lot of money, yes, he got out at the right time, but he really did contribute to the economic devastation of this town. And he didn’t get out of here at the right time. He was pushed out by bankruptcy.” ■







NEW WORLD



STARTUPS

—SCIENCE—

MEDICINE

HEALTH

WILDLIFE

SPACE

GOOD SCIENCE

## FROM BREAKFAST IN STYROFOAM TO STYROFOAM FOR BREAKFAST

# To rid the world of plastic dishware, the worm's the word


**+**  
**THEY CAN STOMACH IT:** After discovering that mealworms can biodegrade Styrofoam, Wu's team plans to investigate the mechanism at work by isolating bacterial strains found in the worms' guts.


**MORE THAN** 1 million tons of plastic foam cups and plates—most made of polystyrene resin—were discarded in the U.S. in 2013, says the Environmental Protection Agency, and the stuff can languish in landfills for many years. But there may be a simple solution: mealworms.

Two papers published in the journal *Environmental Science & Technology* in September found that the larvae form of the beetle *Tenebrio molitor* can eat and rapidly break down Styrofoam and other forms of polystyrene generally thought to be nonbiodegradable. After roughly 10 days adapting to a new Styrofoam diet, the mealworms could degrade the plastic in their guts in less than 24 hours, turning 47.7 percent of what they ingested into carbon dioxide and most of the rest into fecal matter.

Several forms of analysis showed that the mealworms' guts had depolymerized the polystyrene molecules—in other words, they could break apart the links among the molecule's

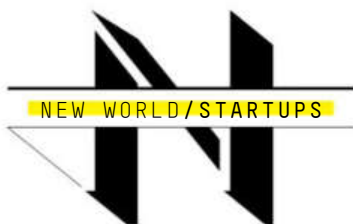
components. The Styrofoam-eating mealworms completed their life cycles—from larva to pupa and finally adult beetle—just as those subsisting on a normal diet of bran do, though their weight didn't increase as much as that of a bran-fed control group. The researchers, from Stanford University and Beihang University in Beijing, also looked more closely at the microbial environment of the mealworm gut and the key role it plays in the plastic degradation process.

After giving their insect subjects antibiotics for 10 days to suppress the activity of gut bacteria, the scientists found that the creatures could no longer degrade the plastic. They isolated one bacterial strain and demonstrated its degrading effect on polystyrene even when outside the gut—albeit at a much slower pace. The ultimate goal of the project, says Wei-Min Wu, a senior research engineer at Stanford and an author on the papers, is to turn this into tech that can “accelerate remediation of plastic contaminated sites.” 

BY  
**STAV ZIV**  
 @stavziv

YU YANG





## DISRUPTIVE

# THE BILLION-DOLLAR MISTAKE

The best ideas in tech these days are the ones everyone agrees are stupid...until they're not

**SITTING ACROSS** from me for our interview, Airbnb CEO Brian Chesky demonstrated why artificial intelligence robots won't take over the job of entrepreneur anytime soon.

No robot would ever be as crack-brained and heedless as Chesky was at his company's beginning—actually, as any entrepreneur must be today. In this warped era of company creation, the only good business ideas are really bad ideas. Code that into an IBM Watson and watch its circuits melt.

The interview with Chesky took place at New York University, in front of an audience of mostly students who someday want to start companies. Chesky retold Airbnb's creation story. He and Joe Gebbia, recent graduates of the Rhode Island School of Design turned jobless roommates in San Francisco, couldn't afford their rent. A major design conference was coming to town, and hotels were sold out. The roommates blew up three airbeds and put up a website offering to rent them out and serve cereal in the morning. Hence AirbedAndBreakfast.com. They got three paying customers.

"Does that sound like a big idea?" Chesky quipped. "I remember someone saying to me, 'Don't worry about your idea. If it's any good, everyone will dismiss it.'"

I've been hearing a lot of that lately. Bryan Roberts, a venture capitalist at Venrock, told me he has to look for what he calls non-consensus

ideas. These companies have to have "something most people think you can't surmount, or that if you do surmount, no one will care." Snapchat, for instance, falls into that latter category. Early on, a lot of people wondered why anyone except sexting teenagers would care about a service that disappears their naked selfies. Today, the company is valued at \$16 billion. Go figure.

Why search for non-consensus? In this era of constant connectivity and social media, everyone knows what everyone else is doing instantly. Cloud services and open-source software allow anybody with an idea to get it up and running quickly for very little money. Add all that together and the second an idea seems sane, 30 companies are already doing it and fighting for attention, investment and customers. That's not the kind of business that's going to blow up into a multibillion-dollar, world-changing enterprise.

A non-consensus company like Airbnb or Snapchat buys time in the shadows to build a business that hardly anyone thinks is worth building. Then another phenomenon of our ultra-connected age kicks in. As Roberts says, "Things go from non-consensus to consensus very quickly, but by then you [the company] have some competitive advantage that's hard to surmount." Nobody sees it, and then—boom!—it's everywhere, constantly tweeted, liked, pinned and shared. Slack, Dropbox, YouTube—you've watched it happen a hundred times. For Airbnb,

BY  
**KEVIN MANEY**  
[@kmaney](#)



that takeoff moment came in 2011. Today, Airbnb offers more rooms than Hilton, Marriott and Hyatt combined. It's been valued at \$25.5 billion.

The speed is what's new. Non-consensus ideas have always driven the greatest innovations. (When King Gillette started selling disposable safety razors in 1904, most men wondered why they'd give up their straight razors.) But in the past, starting a business often involved manufacturing, and your word had to be spread by advertising. The conversion to consensus was more like a journey than a light switch. New gadgets could be protected by patents for decades. Today, a fraction of startups even file for a patent. There's no time. The better protection is having potential competitors think you're nuts for just long enough that they can't catch up once you prove you're not.

The challenge of searching for non-consensus ideas, then, is separating good non-consensus ideas from ideas that just plain suck. In the earliest stages, as when Chesky was renting blow-up beds, the two look the same. In honest moments, every investor or entrepreneur will tell you they can't tell

the difference. Chesky's advice: "You just have to build a solution for a problem in your own life." Solve your own small problem, and it might later scale to solve a lot of people's bigger problems.

In fact, when you think about it, the legendary entrepreneurs have understood that their jobs weren't just to invent something. That may be the easy part, the part someone like Chesky can stumble into. The real job is changing people's minds. A non-consensus idea by definition has no demand. No one thinks he wants or needs it. Inventing Airbnb was one thing. Convincing a mass market that it's wonderful to stay in other people's homes while traveling has been the company's real victory.

This circles back to worries that AI will get so smart it will take over all our jobs. Days before talking with Chesky, I met with Joseph Sirosh, who's developing machine learning at Microsoft. He discussed how machines are getting amazingly good at predicting what to do next based on past data. They can suck up all the medical research and patient data ever created and diagnose a rare disease most doctors wouldn't even know about.

But great non-consensus ideas come from the opposite direction. As Sirosh said, past data will always show that a non-

**SNOW THYSELF:**  
To break out today  
in Silicon Valley,  
you need some-  
thing that may  
sound crazy, like a  
business that rents  
out a hotel room in  
a cable car in the  
French Alps.

+



**“DON'T WORRY  
ABOUT YOUR  
IDEA. IF IT'S  
ANY GOOD,  
EVERYONE WILL  
DISMISS IT.”**

consensus idea will fail. Use AI to analyze Airbnb in 2008 and it would've suggested Chesky stick to his other idea, making politically themed breakfast cereal. Chesky and Gebbia actually funded Airbnb by selling boxes of Obama O's and Cap'n McCain's.

In this modern age, the great value of humans—our ultimate triumph—seems to be our willingness to do things that make absolutely no sense. ■





## CLINICAL RACISM

# Why some of the world's most important medications don't work for minorities

**MINUTES SEPARATED** Are Yana Hill from death as she struggled to breathe in the hallway of her San Francisco high school. The 18-year-old had lived with asthma attacks since before she could talk, and on that day, in April 2014, she could not speak. She thrust the rescue inhaler she carried in her backpack between her lips and inhaled. No relief. It felt, she thought, as if a charley horse had formed in her chest, knotting her lungs—each gasp trampled by tightening airways. Her pursed lips turned gray, and all she could think about was her unborn baby. Hill, eight months pregnant, clutched her inhaler and prayed for paramedics to arrive.

“I take my medicine every day. I do everything the doctors tell me. I’ve tried every single thing, and I still have attacks,” Hill said a little more than a year later, as a nurse at San Francisco General Hospital’s Asthma Clinic placed a stethoscope on her back, between her shoulders. Her wheezing was barely audible. Each expiration sounded like the whistle of a distant tea kettle.

The attack in 2014 put Hill in the hospital. Asthma attack patients in the ER are often given oxygen and albuterol or other medications to relax the airways through a nebulizer mask. These treatments typically last a couple of hours, but Hill’s airways weren’t opening. She breathed through a nebulizer continuously for a week. Eventually she recovered, and, two weeks after she left the hospital, her son was born. Others are not as lucky.

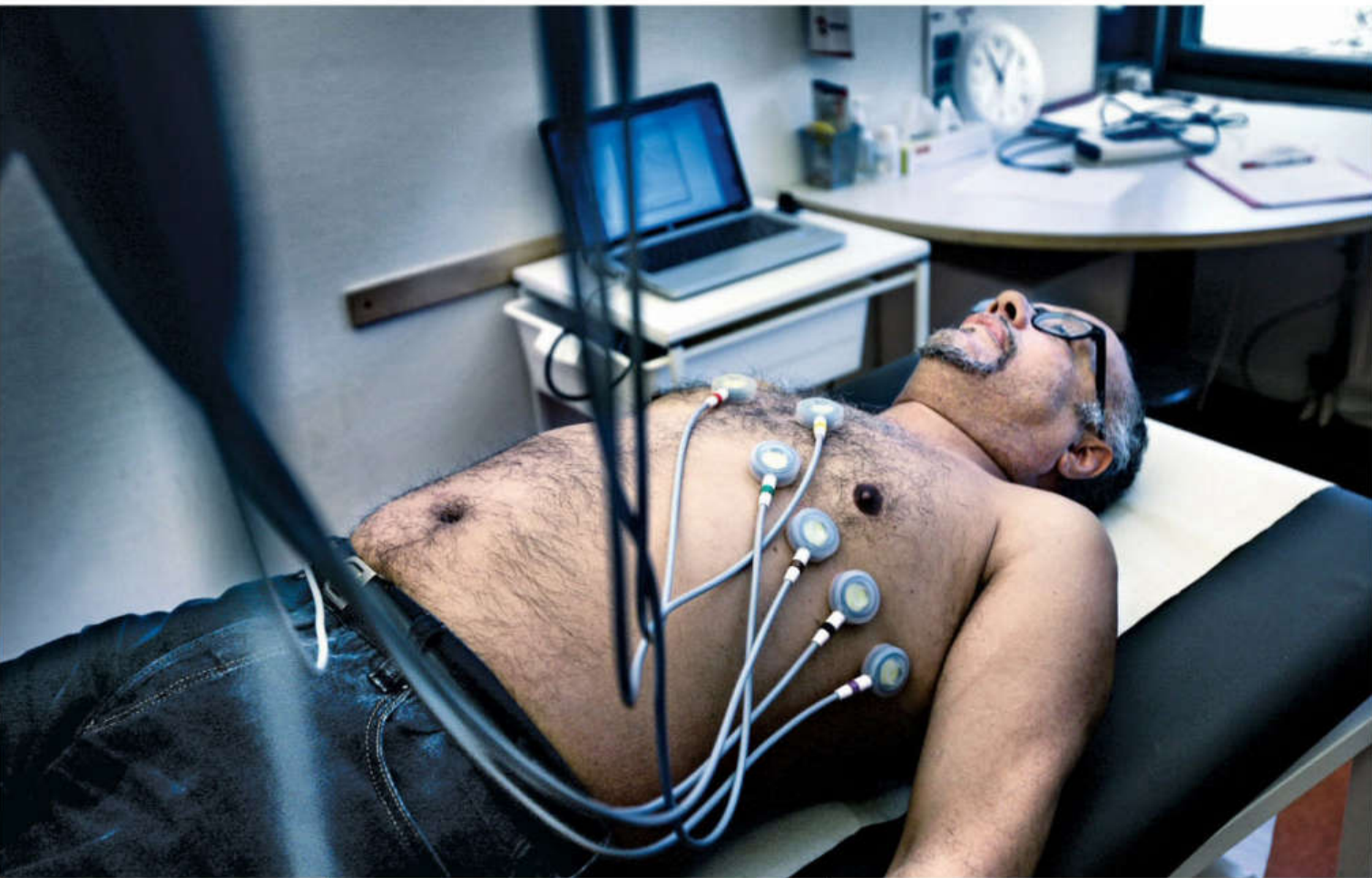
African-Americans, like Hill, are three times

more likely to die of asthma than their white counterparts. Albuterol, the most commonly prescribed asthma medication in the world, is less effective in African-Americans and Puerto Ricans than in other racial and ethnic groups. According to one study, 47 percent of African-American kids and 67 percent of Puerto Rican kids with moderate to severe asthma didn’t respond to albuterol; only 20 percent of Dutch kids with severe asthma weren’t helped by the drug in a separate study. Blacks who use long-acting bronchodilators to control asthma are four times more likely to die or be hospitalized for severe asthma complications than whites.

Genetic differences affect how minority groups respond to treatment for other diseases too. About 86 percent of Asian-Americans are estimated to have a genetic trait that makes them hypersensitive to warfarin, the most commonly used anticoagulant drug, putting them at risk of excessive bleeding at doses typically prescribed for white Americans. Only about 16 percent of white Americans have that trait. Up to 75 percent of Pacific Islanders have a genetic trait that makes them poor responders to the blood thinner clopidogrel, putting them at risk of recurrent heart attacks. Last year, in Hawaii, the state attorney general sued the makers of Plavix, claiming false, unfair and deceptive marketing, because the drug has little to no effect in an estimated 30 percent of the state’s population.

What part of the world your ancestors came from can affect your disease risk and determine

BY  
**LINDSEY KONKEL**  
[@LindseyKonkel](https://twitter.com/LindseyKonkel)



**UNTESTED:** In the Netherlands, a man participates in Heliuss, a large study examining the differences in health between various ethnic and cultural groups. In the U.S., minority groups have long been left out of medical testing.

how your body metabolizes certain drugs. Yet 96 percent of modern studies on disease genetics have been conducted in Caucasians, people of European descent. In the U.S., African-Americans and Hispanics make up nearly 30 percent of the population, yet account for only about 6 percent of all clinical trial participants. The result is a one-size-fits-all approach to medicine that benefits some segments of the population more than others. And the problem is bound to worsen: As the nation's interest and investment grow in precision medicine, the racial health disparity gap may be exacerbated if minority participants aren't better represented in future research initiatives, experts warn.

**IN A SUNNY HALLWAY** of Dr. Esteban Burchard's Mission Bay research laboratory hangs a framed print of Mexican artist Diego Rivera's "Flower Seller." In it, an indigenous Mexican woman kneels as she stretches to wrap her arms around a mighty bundle of calla lilies—Rivera's homage to the perennially downtrodden. "It reminds me

## NINETY-SIX PERCENT OF MODERN STUDIES ON DISEASE GENETICS HAVE BEEN CONDUCTED IN CAUCASIANS.

why I come to work every day," Burchard says.

A pulmonologist at the University of California, San Francisco (UCSF), Burchard leads the nation's largest pediatric asthma research cohort composed entirely of blacks and Latinos. He has identified a genetic variant for severe asthma that is 40 percent more common in African-Americans than Caucasians. His research shows that ethnicity is the most important factor in determining whether a patient will respond to asthma therapy—even more important than the severity of the disease or the patient's socioeconomic status.

Like many of the participants in his study, Burchard grew up poor, just blocks from San



Francisco General's Asthma Clinic, in the Mission District, a hotbed of Latin American political activism in the 1960s and 1970s. Half-Latino, half-Caucasian, Burchard and his four siblings were raised by their single Mexican-American mother, a schoolteacher. Chinese neighbors helped watch and feed him—he still speaks some Cantonese. Burchard was fascinated by the racial diversity he saw around him but frustrated by the rigid social structures girding it. “My mom was darker than me. Growing up, I could go places where she couldn’t. I was so perplexed by that,” says Burchard, who’s made a career out of studying the nexus of genetic and socio-environmental factors that influence health and disease.

Historically, within medical research, African-Americans, Native Americans and other minorities were often relegated to unscientific experiments aimed at bolstering eugenics—such as the disfiguring procedures performed in the antebellum South by white physicians on non-consenting black slaves. In addition, they’ve historically been excluded from clinical and therapeutic trials that seek to uncover risk factors for disease and offer life-saving new treatments. Consider the infamous federally funded Tuskegee syphilis experiment—shut down in 1972—which denied treatment to hundreds of African-American men suffering from the disease.

In the U.S. medical community, studying racial differences in disease susceptibility and response to treatments remains controversial. Race and ethnicity are social constructs that have been used to marginalize and exploit. Scientifically, race serves only as a crude proxy for what experts call genetic ancestry—the diverse signatures that arose in the genetic code as our ancestors traversed the globe.

Some experts worry that a focus on finding genetic differences obscures the need to address the socioeconomic disparities that lead to uneven access to health care in the U.S. “Focusing on inclusion in clinical trials is a great way to ignore the fact that large numbers of poor and minority people are getting less than optimal health care,” says Dr. Otis Brawley, chief medical officer for the American Cancer Society.

Yet because of its social baggage, race remains a powerful tool for studying patterns of disease and health, according to Sam Oh, an epidemiologist in Burchard’s laboratory at UCSF. A person’s self-identified race or ethnicity can offer important clues beyond genetic ancestry about important cultural, socioeconomic and environmental factors that may influence disease risk.

Nearly 30 percent of Dr. Latha Palaniappan’s patients in the San Francisco Bay Area are of



**+**  
**UNTREATED:** At times throughout history, minority groups have been treated like guinea pigs. In the infamous Tuskegee Syphilis Study, black men were included as part of clinical testing but excluded from treatment.

Asian descent. In the past, Asians were rarely included in clinical trials, says Palaniappan, an internist and medical researcher at the Stanford University School of Medicine. “For 1 out of every 3 patients I see, there is little research to guide my management. We are flying blind in terms of clinical care for Asian-Americans,” she says. And when Asian-Americans are studied, says Palaniappan, researchers often focus on one Asian subgroup—forcing clinicians to extrapolate about disease risk and treatment for other Asian-Americans. This approach ignores the tremendous genetic and cultural diversity between different groups of Asian Americans. Take heart disease: “If you lump all Asians together and compare them to the white population, heart disease risk looks about the same,” says Palaniappan. “But if you look closer, you see that Chinese actually have a lower risk, while Asian Indians and Filipinos have a much higher risk.”

Burchard made a similar discovery when he compared asthma rates among Latinos. Nearly 20 percent of all Puerto Ricans have asthma, while less than 5 percent of Mexican-Americans suffer from the disease.

**THERE ARE MECHANISMS** meant to ensure racial equity in biomedical studies. The National Institutes of Health Revitalization Act, instituted by Congress in 1993, mandated inclusion of minorities in federally funded clinical research. But, says Moon Chen, an expert in cancer health disparities at the University of California, Davis, the act hasn’t done its job. Last year, Chen and colleagues found that less than 2 percent of clinical cancer



trials funded by the National Cancer Institute since 1993 focused on any racial or ethnic minority population. “The proportion of minority adults enrolled in cancer clinical trials is not adequate or representative of the U.S. population,” they concluded. Total cancer incidence in minorities is expected to increase by 99 percent, compared with just 31 percent for whites, in the next 15 years. In addition, less than 5 percent of all lung disease studies funded by the National Institutes of Health (NIH) in the past two decades have included a statistically meaningful number of participants from racial or ethnic minorities, Burchard and colleagues reported earlier this year.

Primary investigators are mandated to submit an inclusion plan when applying for NIH-funded research, but there are few incentives to follow through. “We have not established any mechanisms of accountability or consequences for not doing it,” says Dr. Eliseo Pérez-Stable, director of the National Institutes of Minority Health and Health Disparities, an NIH branch established through the Affordable Care Act to improve minority health and health disparities.

Studies show that minority researchers are more likely to focus their research on health disparities and addressing questions relevant to minority health. But minority physicians and scientists themselves are underrepresented among faculty at U.S. medical schools and research centers. They face additional barriers to getting their studies funded. A 2011 review of grant applications to the NIH found that African-American and Asian-American researchers were 13 percent and 4 percent less likely to be funded than their white peers, respectively.

A dearth of minority researchers involved in grant review committees and other decision-making bodies can lead to subtle bias in the selection process, says John Dovidio, a psychologist at Yale University. “People tend to have more confidence in people like them. When you have to choose one applicant over the other, you’re going to go with your gut. Racial bias colors that intuition in subtle ways,” he says. In addition, minorities are more likely to be poor and lack access to medical centers that refer patients for clinical factors. Cultural, linguistic and historical justice factors also create barriers.

In recent years, the NIH has funded investigations to understand how subtle bias occurs during the process and has taken steps to eliminate it, including launching a pilot program to make the review process anonymous. It has also



funded initiatives to increase diversity in the biomedical workforce, including partnering with universities to fund training and mentorship programs for minority students and young scientists pursuing careers in biomedical research.

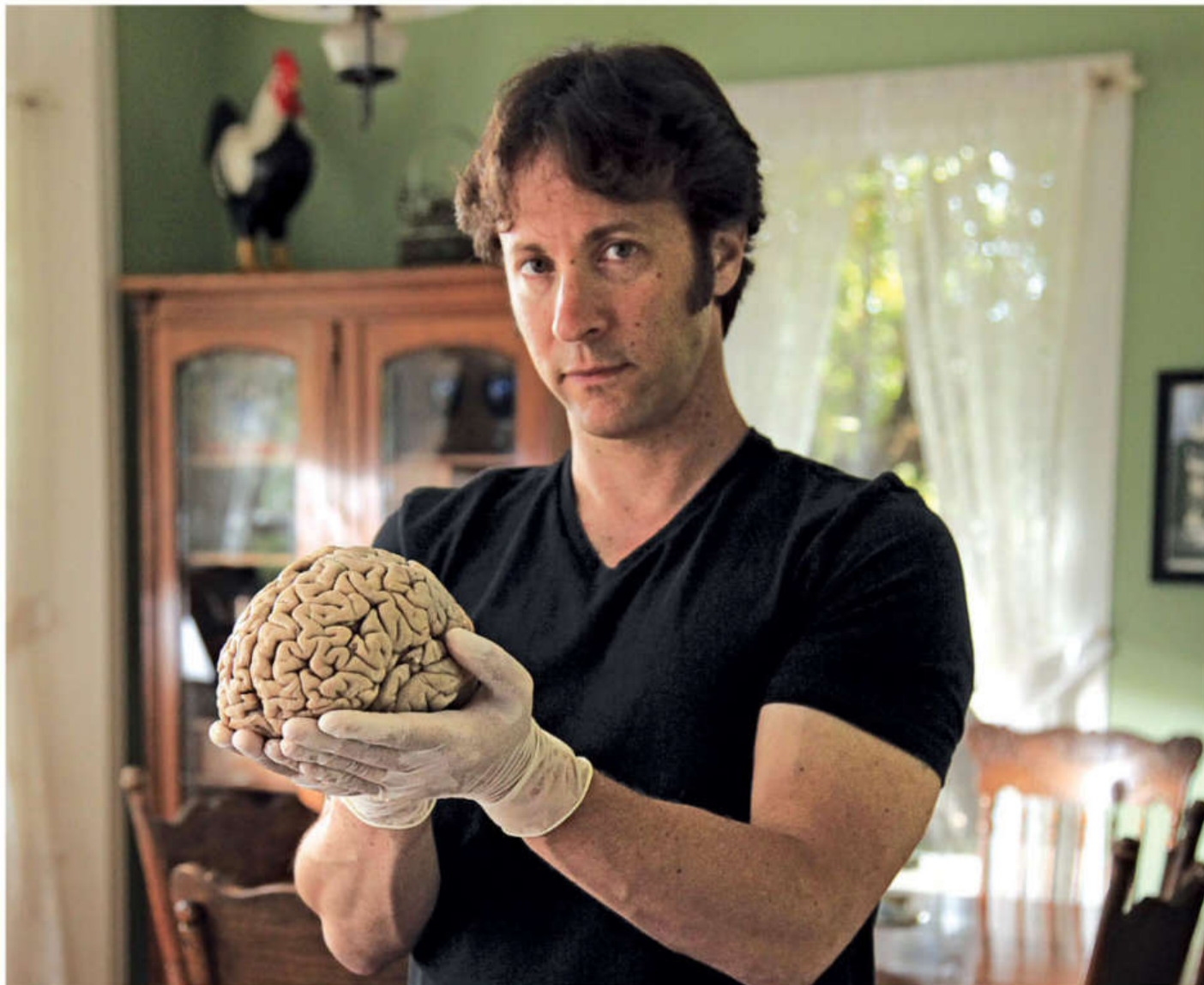
While such steps may have a greater impact on future generations of researchers, says Pérez-Stable, more needs to be done right now to incentivize the current field of research scientists and decision-makers to pay attention to the problem in a serious way. “The changing demographics of the U.S. make this an urgent issue, in my opinion,” he says. More than half of all Americans will belong to a minority group by 2044, according to the U.S. Census Bureau. A growing number of taxpayers stand to be underrepresented in the medical research they help to fund, says Oh.

## “WE ARE FLYING BLIND IN TERMS OF CLINICAL CARE FOR ASIAN-AMERICANS.”

In January, President Barack Obama announced his Precision Medicine Initiative aimed at accelerating biomedical research on patient-centered treatments. The \$215 million investment will include a research study of 1 million Americans. Kathy Hudson, deputy director for science, outreach and policy at the NIH, called recruitment of underrepresented minorities over the next two decades a “high priority” for the research initiative. The NIH has solicited feedback from doctors and scientists such as Burchard on how to create a diverse research cohort. The effort is an incredible opportunity to move forward on addressing questions of minority health, says Burchard, a member of the Precision Medicine Initiative Working Group, which has advised the NIH on how to recruit 1 million volunteers. “Getting it right is a matter of social and scientific justice.” ■

This reporting project was funded through a grant provided by the Reporting Award at New York University’s Arthur L. Carter Journalism Institute.





## HE'S GOT BRAIN ON THE BRAIN

TV's next science pitchman also wants to cure drug addiction

**THE BRAIN** is a battlefield, says neuroscientist David Eagleman. You might think you're making single-minded decisions, but you're really not. "Instead, you are made up of multiple drives, all of whom are trying to be in control," he says. Despite being a bit disconcerting—Am I not who I think I am? What are these voices in my head?—the "team of rivals" brain model

might, Eagleman believes, pave the way toward the end of drug addiction in the United States, if he can figure out how to teach people to harness those myriad drives.

He's in the early stages of a project at his lab at the Baylor College of Medicine that uses real-time feedback in brain imaging to, essentially, reshape how addicts react to their particular

BY  
**STACEY ANDERSON**  
[@staceykanderson](https://twitter.com/staceykanderson)



**+**  
**THE ART OF SCIENCE:**  
Eagleman's book of fiction, *SUM*, explores 40 possible afterlives, each of which offers a different insight into the human psyche.

bête noir. "You've got these different neural networks that all have purposes and agendas," he says. "Part of your brain really wants something, then there are other networks trying to resist it. We're trying to help people to see these battles under the hood and tip the scales." Eagleman connects his subjects to an MRI machine, then shows them photos of drug paraphernalia; he instructs them to alternately allow their cravings to overwhelm and then suppress their urgings for their drug of choice, charting their neural responses on screen via a gauge similar to a speedometer. His theory is, with practice, the subjects will be able to hone their resistance impulse toward these powerful triggers.

"I call this 'the prefrontal gym'—it's just like going and working out, figuring how to move the needle. The idea is by strengthening your capacity to suppress your craving, when you're out in the real world, you'll still want it, but you'll have the cognitive tool to resist," says Eagleman energetically.

Early footage from these trials creates a particularly dramatic interlude of *The Brain With Dr. David Eagleman*, his new documentary miniseries for PBS. Written and hosted by the scientist, the program (which premiered on October 14) attempts to educate neuroscience neophytes on the most fundamental processes of our most important organ: how it channels thought, how it processes reality, how it functions in both conscious and unconscious states.

Much like his childhood hero, Carl Sagan (and Sagan's *Cosmos* heir, Neil deGrasse Tyson), Eagleman is a gregarious communicator well-honed for TV; he cuts an earnest, convivial figure as he translates dense research into lean layman's terms. The Guggenheim fellow often brims with youthful glee as he breaks down his own career focuses of synesthesia (a condition in which information between the senses is blended), time perception (how one interprets the temporal order of events in the world, from tactile to visual and auditory sensations) and neurolaw (how neuroscience research findings should dictate societal constructs, from criminal punishment to how juries should weigh unconscious actions). He often employs some form of flashy visual metaphor, whether he's clad in full baseball regalia to hit a fastball (to demonstrate unconscious physical reaction) or going spelunking in a foreboding cave (to replicate the dark confines of the human cranial cavity).

The scientist's own résumé is pretty surreal,

including a volunteer stint in the Israeli army, an undergraduate degree in British and American literature from Rice University, and a short foray as a stand-up comedian in Los Angeles. He's also authored a best-selling fictional work, *Sum: Forty Tales From the Afterlives*, which whips up ingenious alternatives to the usual binary argument of the religious heaven versus the atheistic void; in one tale, God is the size of a microbe, with no comprehension of humanity. In another, the undead relive their most common earthly activities in time-blocked spans: They spend six unyielding days clipping their nails, two years feeling bored, 200 days showering, etc. Eagleman's most celebrated nonfiction book, *Incognito: The Secret Lives of the Brain*, delves into chewy pontifications of free will, neural contradictions and biological interdependence, while also allotting space for the odd Mel Gibson burn.

Eagleman's theatrical flair also extends to his research projects. In a talk he gave this spring at a TED (Technology, Entertainment, Design) conference to debut a vest of his invention that translates audio information into tactile sensations,

---

## EAGLEMAN DROPPED STUDY PARTICIPANTS IN A 110-FOOT FREE FALL FROM THE TOWER OF A LOCAL AMUSEMENT PARK RIDE.

---

he ripped off his navy button-up shirt mid-stride, unveiling the glowing white garment as proudly as Superman unfurling his cape. In 2007, to test whether time actually slows down for someone during a life-threatening experience—or whether the amygdala's thorough capturing of details merely feels longer in that panic or whether "you're seeing time stretched out, like Neo in *The Matrix*, or it's just a retrospective trick," as Eagleman translates—he and a grad student, Chess Stetson, dropped participants in a 110-foot free





fall from the tower of a local amusement park ride into a net. Amid their shrieking, the subjects tried to read numbers flashing on specialized wristwatches at a rate slightly faster than what humans can normally perceive; if they were actually seeing the world at a slower pace, they'd be able to detect the numbers. (Their findings: Neo alone had that ability.)

Though Eagleman has taken on a strong ambassadorial role for neuroscience—becoming a sort of “public intellectual,” according to his peer Michael S. Gazzaniga of the University of California, Santa Barbara—his addiction research may yield a real impact in the field. Eagleman’s work in this field re-examines the potential of neuroscanning and the use of MRI machines to treat addiction. Though they are most commonly used to detect neurological cancers and diseases to the central nervous system, such as epilepsy and dementia, MRIs are also well-suited to detect the slight changes of rewired associative patterns. It’s not a purpose that has been explored at length yet, or channeled into larger rehabilitative efforts the way Eagleman is attempting, but the potential is there. Hollywood recognized that in 2004: The movie *Eternal Sunshine of the Spotless Mind* had a similar premise, with rogue scientists strapping “patients” into brain scanners and charting their neural reactions toward ex-lovers.

Eagleman’s real-world version is a sort of advancement of cognitive behavioral therapy, a popular type of psychotherapy; this process identifies negative thought patterns and works to curb those triggers gradually. Twelve-step programs hinge on this system; it’s a cornerstone of Narcotics Anonymous and has been endorsed by the National Institute on Drug Abuse and the American Psychological Association as one of the most effective methods currently available for preventing drug relapse. (Though only a small percentage of the estimated 20 million Americans age 12 and older who regularly use

illegal drugs seek treatment, both note.)

“I think what we’re doing is in alignment with other methods that people do, like meditation and cognitive therapy,” says Eagleman, “but we’re putting that on turbo boost.” Dr. Marvin Seppala, chief medical officer of the Hazelden Betty Ford Foundation, calls Eagleman’s approach “remarkable.” “I think it could really be helpful, because craving is one of the essential features of addiction and contributes to the long-lasting potential for relapse,” says Seppala, who has not worked with Eagleman. “The reward center of the brain is subcortical, so it’s kind of subconscious. If you can see how much your brain is being altered by such things and work in real time to reduce how that alteration occurs, I think that could be really powerful.”

However, Seppala had reservations about the method taking off as widely as Eagleman hopes, if only for the prohibitive costs of neural scanning. “I’d have doubts, only because of the continuing financial pressure from insurance companies and other payers to limit the cost of health care,” he says. The average cost of MRI

“IT’S IN ALIGNMENT WITH OTHER METHODS THAT PEOPLE DO, LIKE MEDITATION AND COGNITIVE THERAPY, BUT WE’RE PUTTING THAT ON TURBO BOOST.”

brain scanning exceeds \$1,100 in the U.S.—and insurance companies have become so reticent to cover MRIs, it’s become a subject of research papers. Seppala adds, “Also, craving is only one aspect of addiction. There is also compulsion to continue to use, loss of control and diminished recognition of the problem itself, which is part of the issue of frontal lobe damage.”

Eagleman’s addiction approach, with its futuristic bend, also seems to appeal to the same dramatic inclinations of his career. “Hey, science is hard. There’s a lot of work; there’s so much competition for grant funding and publishing. I feel like there are a million ways people can go down rabbit holes and do things that end up being really boring,” he says. “When I thrive is trying to do the experiments that get me out of bed in the morning.” N



WHO KNOWS THE OTTO MAN?



66 GROSVENOR STREET, LONDON W1 • [WWW.OTTOUOMO.COM](http://WWW.OTTOUOMO.COM) • +44 (0) 203 475 3888







DOWNTIME

BOOKS

TELEVISION

MUSIC

ALCOHOL

ART

MOVIES

## JOANNA NEWSOM'S HIGH DIVE

# How the cult songwriter tuned out the world to create her new album

**+**  
**THE LIFE AQUATIC:** Newsom, a singer, songwriter and harpist, surprised the Internet this summer by dropping a new video, "Sapokanikan," and announcing a new record, *Divers*, out October 23.

"**WIKIPEDIA** is amazing," exclaims Joanna Newsom. The harpist and songwriter likely won't read the lengthy entry about herself, but she frequently dives down Wikipedia rabbit holes. "Reading something on Wikipedia will often send me off in a new direction," she says. While living in New York's Greenwich Village several years ago, for instance, Newsom found herself digging up historical nuggets on the neighborhood around Washington Square Park.

Unlike most of us, Newsom channels these procrastinatory-seeming Internet binges into song. Vivid, stunning songs of melancholy and longing, written for the harp or piano, with dizzying and self-referential verses rich with literary allusion. The song inspired by the Washington Square Park rabbit hole, "Sapokanikan" (which I am very much afraid of mispronouncing in Newsom's presence), is named after a Native American village located in what is now lower Manhattan. Built around a winding piano melody, the song tells of forgotten mayors and Tammany Hall, of 19th-century sonnet "Ozymandias" and

of history's inevitable fade into obscurity.

When Newsom released "Sapokanikan" unexpectedly one morning in August, accompanied by a music video and the news that she would be releasing her first album in five and a half years, the Internet erupted, as if the folksinger had just climbed out of an unmarked grave. Within hours, fans—and NPR—set to work deciphering the song's tangle of references. Newsom's fan base is deep, devoted and (in its own way and on a smaller scale) as obsessive as Radiohead's or Bob Dylan's a generation prior. There is even a collection of both personal and scholarly interpretations of her music titled *Visions of Joanna Newsom* and a modestly successful band named after her in Wales (Joanna Gruesome).

An indie icon, one of the most revered songwriters to emerge this side of the millennium, she's spent five years in varying degrees of seclusion, dabbling in film and disappointing the fans who were begging for a new record. *Divers*, the album she's finally finished, arrived October 23 to rapt anticipation. It's lighter in tone and shorter

BY

**ZACH SCHONFELD**

[@zzzzaaaacccchh](#)



than the 2010 epic *Have One on Me*, and it's the most instrumentally varied work she's ever produced, with both keyboards and synths accompanying her long-favored harp. At 11 tracks in 52 minutes, *Divers* is the first Newsom album since her debut not to push the extremes of the album format (there are no nine-minute baroque epics or multiple discs here) and the first music she's put out since marrying actor Andy Samberg in 2013. A few numbers even sound...joyful?

For Newsom's followers, it's a monumental occasion. "I've had a Google Alert set up for this for 4 freaking years," one fan tweeted when "Sapokanikan" was released, while another said he felt "broken from an excess of happiness." Soon after the song appeared, Newsom's father, a retired doctor in California, emailed his daughter a link to the lyric annotation site Genius.com, which had posted a full annotation of it.

Did they get it right?

"In terms of all the references, they got a lot of them," Newsom says. "They didn't get them all, though!" she adds, cackling a bit mischievously.

It's a rainy afternoon in September, and Newsom and I are chatting in the empty restaurant of the Four Seasons Hotel in Manhattan. The artist's speaking voice is not much like her singing voice, though it has the same hint of untraceable twang.

Here is the part of the article where you'll either appreciate some background on Newsom or feel outraged by the notion that anyone might need such a primer. That neatly captures the polarized reception Newsom's music has garnered since the start. Raised in the small town of Nevada City, California, and classically trained on piano and harp, Newsom released her first album, *The Milk-Eyed Mender*, at the age of 22 in 2004. The mesmerizing, story-like songs drew praise, though her vocals—a high and gloriously unrestrained Appalachian wail—made her as divisive as any singer this side of Björk.

For her second album, *Ys* (pronounced "ees"), she hired a full orchestra to bring to life dense parables about farm animals and fires, some stretching longer than 10 minutes. That album contained lyrics such as "Awful atoll / O, incalculable indiscreetness and sorrow / Bawl, bellow," and its cover image depicted Newsom as a medieval maiden, as if she were warning any listener who wasn't totally committed to keep away.

Accessibility has never been her priority. Today, at the preference of herself and the Drag City label, Newsom's music is unavailable on Spotify. (She's not sorry about this. She says of Spotify: "It's a business that's literally built from the ground up to circumvent labels having to pay artists.") Spotify, of course, had barely emerged when Newsom last



**+ HARP AND SOUL:** Newsom, pictured here in Budapest in 2011, says she doesn't listen to music when she's recording a new album. "Right now, everything sounds like garbage to me," she says. "I get ear fatigue."

released an album. *Have One on Me*, a sprawling triple-disc set, might have seemed to be another extreme gesture to ward off the unbelievers, but the songs were the most affecting of her career, with uncharacteristically direct meditations on heartbreak and a voice that had deepened, following a bad case of vocal cord nodules.

On *Divers*, that voice is back, but it's what surrounds it that's most immediately striking. With a vast pool of collaborating composers, including Dave Longstreth (Dirty Projectors) and classical composer Nico Muhly, and a wide range of often archaic instruments ranging from clavichords to Marxophones, *Divers* is Newsom's most richly produced set yet.

Press materials promised an album of "sci-fi sea-shanties and cavalier ballads." The nautical theme is clear—there's an oceanic album cover and a title track about a pearl-hunting romance. But it's not the ocean that fascinates the songwriter, "it's the line separating sea and sky," she says. Newsom often talks about her work in airy, abstract terms. "I think most of the songs that take place on the ocean are very concerned with that line."



She has long puzzled over borders of both love and geography and how they might be traversed. “When you come and see me in California,” she sang on *Have One on Me*, “you cross the border of my heart.”

But the final track on *Divers*, “Time, as a Symptom,” brings Newsom back to shore, grappling with loss. “The moment of your greatest joy sustains,” she promises the listener, and suddenly the song swerves into a frenzied march of voices, strings and dove calls. The track’s gushing refrain calls out for the “nullifying, defeating, negating, repeating joy of life,” and the grief fades into the swell of interlocking vocal harmonies.

Those five and a half years might have been worth the wait for this song.

*Divers* is Newsom’s most costly work to date and, by a matter of seconds, her shortest. She also spent nearly half her career working on it. “I’m so glad no one told me when I started it how long this particular idea was going to take,” she says. “I would have been really discouraged. As it was, I was bright-eyed, idealistic and really excited about this idea and forging ahead.”

Writing took up to two years, she says casually. Recording the basic tracks took only a few months. Then the real laborious process: trying to convey to her collaborators how the album sounded in her head. That took a year or two.

There were nonmusical holdups too. In 2013, Newsom married Samberg, her longtime boyfriend, in a celeb-filled wedding in Big Sur, California. Then, in 2014, Newsom made her film debut, narrating and appearing briefly on screen as the mystical Sortilège in Paul Thomas Anderson’s mega-stoned Thomas Pynchon adaptation *Inherent Vice*.

The album was largely recorded by the time she began filming, but it hadn’t been mixed. “I had a distinct feeling through the whole process of making this record that the thing that would give it its identity, the thing that would breathe life into the album, was going to be the mixing process,” Newsom explains. She doesn’t listen to any music while recording an album, until the mixing. Then she revisits her favorite albums for inspiration. “Right now, everything under the sun sounds like garbage to me,” Newsom admits. “I get ear fatigue, and it’s really nice to orient yourself to a complete record that sounds great.” For this album, her reference points for mixing were mostly around the early 1970s. She rattles off a list: Mickey Newbury’s *Looks Like Rain*, Roy Harper’s *Stormcock*, Joni Mitchell’s *Blue*.

She pauses at the mention of *Blue*. “That record is astonishing. If you just look at it as a technical document, it’s incredible. The piano sound that

she has on that record—there’s no piano that has sounded like that before or since.”

She sounds just like a Joanna Newsom obsessive talking about one of *her* songs.

Newsom knows there’s a feverish cult surrounding her, but she’s unconcerned with the details. She doesn’t keep a social media presence or much of a public persona outside of the music. In February, Pitchfork ran a piece titled “The Atypical Fashion Cult of Joanna Newsom.” “I have been made aware of that,” she says. “It’s sweet. It’s awesome. But it’s probably not the best idea for me to personally read it.”

Though her relationship with Samberg has garnered her Emmy appearances and mentions on *Us Weekly*, she guards her private life. The record has much to say about love and loss and places in between, but it is not diaristic. Newsom refers to her songs as being sung by a “narrator,” voiced by something apart from herself. “Every single song is narrated by a slightly different entity on this record,” she explains. “They’re all kind of about the same thing, but

---

“I’VE HAD A GOOGLE ALERT SET UP FOR THIS FOR 4 FREAKING YEARS,” TWEETED ONE FAN.

---

they are approaching that collection of themes from different angles.” *Divers* is the first Newsom album not to feature her on the cover in some fantastical garb, but “the cover still is representative of the narrator.”

I ask her if she would articulate the themes. She refuses, as if I’ve asked a novelist for the CliffsNotes version. That’s a task for the cult, the devoted followers, who’ll get to the bottom of *Divers* like divers for pearls.

“It’s all there,” Newsom says. “It’s all in the record. I feel like for me to summarize it is taking the fun away.” ■





## BURDEN OF PROOF

# Can distillers convince the rest of the world to join the American whiskey renaissance?

I'M STANDING outside of a ballroom on the sixth floor of the Marriott Marquis hotel in midtown Manhattan, and I can barely move. Surrounding me on all sides are anxious men with glasses in their hands. Most of them are middle-aged, with hair in various stages of thinning or graying (or both). They have paid \$325 or more for the privilege of standing here because, in about 15 minutes, the ballroom doors will open to reveal a paradise of brown liquor—103 different booths offering samples of 350 different types of whiskey.

I regret subjecting myself to this mob as early as I did, but there's no way out of it now. In a fit of desperation, I decide to check the badge I was given at check-in. Sure enough, it says what I hoped it would: New York WhiskyFest—VIP Admission. I shoulder my way through the gaps in the crowd, past a leather vest, a cowboy hat, a pocket of cigar stench someone dragged in from outside, until I reach a staff member. "Is there some sort of VIP line I can get in?" I ask, holding my badge up.

"This is the VIP line," he says. Since everything anyone could want to know about the recent American whiskey renaissance is contained beyond the doors ahead, I figure I can stick it out for a few more minutes.

Scotch, which is made primarily with barley, is what most people around the world think of when they hear *whiskey*. American whiskey typically means bourbon or Tennessee whiskey, the most well-known producer of the latter being

Jack Daniels Distillery. Both are made from corn and are smoother and sweeter than scotch. Rye whiskey, made primarily with rye (obviously), has a spicier taste and is growing in popularity, but it's still a blip compared with bourbon. Larry Kass of Heaven Hill Distilleries once told *Imbibe* magazine that they "spill more bourbon in one day than [they] sell rye in a year."

WhiskyFest New York is one of three similar events *Whisky Advocate* magazine will host in 2015. The others are held in Chicago and San Francisco, and, in 2016, they will add a fourth event in Washington, D.C., for the first time. WhiskyFest is billed as the longest-running such gathering in the country, though it's not the only one. Google the name of any metropolitan area in the United States along with *whiskey* and *festival* and you will not be disappointed. "There have been a lot of new whiskey events that have cropped up in the last five years," says Lew Bryson, an editor at *Whisky Advocate* and author of the book *Tasting Whiskey*. "I think that's probably indicative of the way things are going."

How *are* things going for American whiskey? In 2003, bourbon and Tennessee whiskey generated a little over \$1.3 billion in revenue, according to the Distilled Spirits Council of the United States. By 2014, the number had more than doubled, to \$2.7 billion. Over the past six years, from 2009 to 2014, annual revenue has increased by 46.7 percent. After the dominance

BY  
RYAN BORT  
[@ryanbort](#)



of clear spirits caused the industry to finally bottom out in the late '90s, an uptick was inevitable, but the rise of American whiskey has been the result of more than just market correction. "People are looking for organic food, they're looking at locally made products," explains Bryson. "They're looking for family businesses and things that have been made the same way for generations. Whiskey has all of that, and it's real."

Reid Mitenbuler, author of *Bourbon Empire: The Past and Future of American Whiskey*, attributes the turnaround to the cyclical nature of the spirits industry, but also to our nostalgia for a bygone era, when life could be as simple as the glass of bourbon in your hand. Few pleasures are more American. "Whiskey, more than other spirits, has a heavy symbolism that's rooted in the American Revolution," says Mitenbuler. "That creates a romantic draw. It has a strong pull

from a storytelling perspective."

Beam Suntory, the world's leading bourbon producer and the maker of Jim Beam, might be the most mythologized of all the American whiskeys. At WhiskyFest, Beam's booth is in prime position right in front of the ballroom entrance,

**"PEOPLE ARE LOOKING FOR ORGANIC FOOD, LOCALLY MADE PRODUCTS, FAMILY BUSINESSES. WHISKEY HAS ALL OF THAT, AND IT'S REAL."**

**SHOOTING STRAIGHT: A tram covered in a Jim Beam ad passes through Prague. With whiskey's revenue increasing, American distillers have started pursuing foreign markets.**

PIERRE BESSARD/REA/REDUX

and festivalgoers are treated to samples of its latest innovations—from the pricey Harvest Collection to Jim Beam Devil's Cut, which is made by extracting bourbon from the wood of the charred oak barrels it's distilled in. Sitting in a

chair next to the booth is Fred Noe, great-grandson of the brand's namesake and its current master distiller. He's a large man, bald and with a gray goatee that complements his thick Kentucky drawl. As the Jim Beam brand continues to expand, Noe is the living emblem of its down-home-y history. His presence at WhiskyFest assures consumers that the tradition espoused on the side of the bottle isn't just a marketing gimmick. "Consumers now want the story," he says. "They want to know what they're drinking."

In January 2014, Jim Beam made a bold move to expand when the distillery was sold to Japanese spirits company Suntory for \$13.6 billion. Some consumers worried that one of the last purely American institutions would be corrupted by foreign influence, but so far Suntory has been hands-off, only serving to open distribution channels and expand bourbon's growing global







appeal. In 2002, the United States exported \$376 million in whiskey. In 2014, the number was over a billion for the second year in a row.

But marketing bourbon to foreign consumers isn't the same as marketing it to Americans. "We've learned that what's popular here doesn't necessarily work everywhere else," says Noe. "Different flavors do well in different parts of the world, based on what society you're marketing to. That was a learning curve for us."

Countries such as Belgium, Brazil and, to a much larger extent, Australia have been primary targets for U.S. bourbon exports, and Suntory is continuing to cultivate a taste for American whiskey in Japan, a nation whose native whiskey is experiencing a similar explosion in global popularity. While Beam opted for sex appeal in marketing to U.S. consumers when it hired Mila Kunis as its domestic spokeswoman in 2014, for Japan it chose sophisticated cool: A sharply dressed Leonardo DiCaprio has appeared in multiple commercials for Jim Beam White Label.

Scotch is still the dominant whiskey worldwide, but, as Mitenbuler says, "bourbon's star is rising." Jack Daniel's—technically not bourbon but Tennessee whiskey because of how it is "mellowed" through charcoal—is gaining ground on Johnnie Walker as the world's most popular whiskey brand, and the door is open for Jim Beam to continue to increase its market share as well. "All the bourbon companies are working on export outreach because, largely, it's pretty much untouched," says Bryson. "This is why the growth looks really good for the next 10 or 20 years."

The need to educate consumers has turned Noe from a country-boy bourbon distiller into a celebrity spokesman. He estimates that he spends 75 percent of his time on the road. A large portion of his travel stops, which take him around the globe, are at events like WhiskyFest, where the growth of the spirit is most evident. He's well-versed in the dynamics of such festivals, noting the increased diversity of the crowds, the careful ways in which drinkers plan their sampling routes and the endless cycle of fans asking him for pictures or to have a drink. For Noe, whiskey festivals are often similar, but

they're consistently amusing. "If you just kind of stand back, you'll see some shit," he drawls. "You *will* see some shit."

Returning to the main ballroom after stopping by a high-priced tasting seminar Noe hosted, I realized what he meant. In short, everyone was drunk. Though each booth came equipped with a spitting bucket, they were underutilized, to say the least. Founders of craft distilleries—of which there are now more than 500 in the United States, compared with only a few dozen 15 years ago—excitedly explained to tasters why their product was different from the rest. The "peaty-ness" of certain brands is commented on, and the lengthy line to sample Pappy Van Winkle—the ultra-rare bourbon that can go for thousands of dollars a bottle—is bemoaned.

At one point, I came across a man standing in the middle of an aisle, open-mouthed, tasting glass in hand, with an enormous streak of red sauce down the front of his half-buttoned shirt. If he even noticed, he certainly didn't care. And in a way, this possibly blacked-out guy covered in food is a huge reason why bourbon has flour-

---

## "WHISKEY, MORE THAN OTHER SPIRITS, HAS A HEAVY SYMBOLISM THAT'S ROOTED IN THE AMERICAN REVOLUTION."

---

ished in recent years. He is not someone who is detecting notes of vanilla; he is the indiscriminate whiskey drinker who will take it as it comes, decorum be damned. While scotch demands a certain attentiveness in the way it is consumed, bourbon—the sweetness of which makes it easier to drink—is far more versatile. Its appeal is broader than that of European whiskies, a sign that its growth potential is nearly limitless.

No one recognizes this more than Noe, who sees bourbon as something to be savored however one sees fit, whether it be through a high-priced cocktail or a shot thrown back at the end of a dive bar. "The versatility is one of the main things," he says. "The mixology world is keeping bourbon alive and well. The folks coming up are enjoying it. We've kind of hit the right lick."

Now it seems that the biggest obstacle for American whiskey makers is convincing the rest of the world to enjoy it as much as they do. ■

## TWO QUESTIONS WITH HELENA BONHAM CARTER

Acting's gothic good witch goes to *Suffragette* city

### HELENA BONHAM

Carter is a scene-stealing chameleon, as natural playing manic sex addict Marla Singer in *Fight Club* as she is the queen of England in *The King's Speech*. This month, you'll find her in early 20th-century England for Sarah Gavron's *Suffragette*, about the women who first risked beatings and prison time while protesting for the right to vote. Bonham Carter plays the lawbreaking, lawmaking Edith Ellyn (based on real-life suffragette Edith Garrud), an acid-tongued first-wave feminist who encourages her fellow protesters to bomb mailboxes and get in brawls with the police in the fight for suffrage.

The stakes for Bonham Carter with *Suffragette* were personal. Her great-grandfather Herbert Asquith was the prime minister of Great Britain from 1908 to 1916 and vehemently opposed women's suffrage. Two women were arrested for breaking his windows and attempting to kidnap his daughter, Violet, Bonham Carter's grandmother. "Sometimes feminism is depicted as a caricature

of being aggressive and screechy and hysterical," Bonham Carter says. "[*Suffragette*] is instead very subtle, nuanced and quiet, and makes its point, with bold strokes, very slowly."

### Did you learn anything surprising from playing Edith?

I think what was great about [writer] Abi [Morgan] and Sarah was that they were very collaborative. Edith was originally called Caroline, but I based my character on this real-life woman called Edith Garrud, who taught the suffragettes jiu-jitsu to defend themselves against the police who would be

quite happy to rape and sexually abuse them, you know. And I thought that was so important. The funny thing about jiu-jitsu is that you use the force from the attacker and put it back on them—that's the ultimate defense. She really did think this was a war to be fought. And there were things the suffragettes did that had a very militaristic template. She had her army, and they were all very organized and had discipline.

**I was reading about the feminist activist group Sisters Uncut hitting the film's London premiere and using it as a platform**

### to protest reductions to domestic abuse services. You were quoted as saying it was the "perfect" reaction to the film. Why?

I don't know that much about it, but there were quite a few women that were lying down on the red carpet and were protesting domestic violence. Two women in England die of domestic violence *a week*. It's extraordinary. [The protests were] a kind of genius idea and a good use of a red carpet, I thought. They were lying down—literally lying down—for what they believed in, instead of standing up. I think it was a very just thing to do. **N**



BY

PAULA MEJIA

[@tenaciouspm](https://twitter.com/tenaciouspm)





## FLEMING IS FOREVER

As the new James Bond movie arrives in theaters, don't forget the sparkling spy novels that gave us 007

*SPECTRE* is almost upon us. Trailers have made it clear that the 26th James Bond film—Daniel Craig's fourth outing in the role and Sam Mendes's second as director—will feature some reassuringly familiar Bond-movie tropes: death in the snow, sex on the fly, one-liners by the dozen. But while Mendes appears at peace with giving audiences much of what they expect from Bond films, the Oscar-winning director is not in the Bond business just to recycle clichés. Pre-publicity for *Spectre* suggests that Mendes is continuing the exploration of Bond's history that he began in *Skyfall*, the most recent and, so far, most financially successful film in the series. In so doing, Mendes is attempting to fill out the occasionally blank but compelling main character in British author Ian Fleming's original 12 Bond novels, the first of which was published 62 years ago. Those novels have sold more than 100 million copies, but many of the people who see *Spectre* in the coming days and weeks may not have heard of Fleming. They're missing out. Two and a half hours of cold martinis, Craig's merciless gaze and the producers' even more chilling devotion to product placement can give you only a limited sense of Bond. For a fuller picture, pick up a Fleming novel once you're back from the multiplex. The author was himself parsimonious with details about the famous spy's biography, but he fleshes out 007 with gems of dialogue and description.

The initial Bond novel, *Casino Royale*, was published in 1953, and it was apparent from the very first line—"The scent and smoke and sweat of a casino are nauseating at three in the morning"—that Fleming had a complete sense of his character. By the end of Chapter 1, five pages later, when Bond, still holding the "butt of the .38 Colt Police Positive with the sawn barrel," fell asleep, and "his features relapsed into a taciturn mask, ironical, brutal, and cold," we know all we need to know about him. The book's famous last line—"The bitch is dead now," Bond says when he calls headquarters to relate that his double-agent lover, Vesper Lynd, has killed herself—reaffirms his heartlessness, his barely concealed misogyny and his reflexive devotion to the cause.

Subsequent novels add intriguing dabs to his character and history: He gets married in *On Her Majesty's Secret Service* (1963), but—spoiler alert, if it's entirely necessary at this point—villain Ernst Stavro Blofeld kills Bond's wife on their wedding day, and Bond once again becomes a loner. In the penultimate novel, *You Only Live Twice* (1964), Fleming reveals that 007 had a Swiss mother and a Scottish father, and he was orphaned at age 11—a skeletal backstory that inspired the second half of *Skyfall*, which takes place in the childhood home in Scotland that Mendes invented for him.

The lack of information was deliberate: "I

BY  
EDWARD PLATT



**NOT STIRRED:** Daniel Craig as the suave, unflappable James Bond in *Casino Royale*. The latest Bond flick, *Spectre*, reveals more backstory, but all you need to know about Bond can be found in Ian Fleming's 12 novels.

wished him to be unobtrusive. Exotic things would happen to and around him, but he would be a neutral figure," Fleming wrote in April 1958 in a letter to *The Manchester Guardian*, in response to an article criticizing the "sex, violence and moral decay" of Bond's world. Yet in order to create an "illusion of depth," he had to "fit Bond out with some theatrical props"—the guns, the cigarettes and the vodka martini cocktail, shaken "very well until it's ice-cold" and served with "a large thin slice of lemon-peel," as Fleming described it in *Casino Royale*. (Several months later, Fleming tried the drink, which he "found unpalatable.") Fleming also allowed his spy "a rather precious though basically simple meal," although in fact it wasn't simple at all: When Bond first has dinner with Vesper, he has caviar, "a very small *tournedos*, underdone, with *sauce Bearnaise* and a *coeur d'artichaut*"—a steak and artichoke heart, followed, rather oddly to modern habits, with "half an avocado pear with a little French dressing." The decadent meal proved popular with readers, who were still suffering from wartime food rationing.

It was not just the diet that must have seemed unimaginably rich in postwar Britain: the glamorous women, the distant locations and the flights that take Bond to those places; the expertise in moneyed pursuits such as gambling, skiing and scuba diving; and the mix of deference and lingering superiority that characterizes

Bond's relationship with the CIA agent Felix Leiter and implies that postcolonial, postwar Britain is still an equal partner with its American cousin. All that must have been thrilling to many readers in the 1950s and '60s.

Some elements of the books have dated badly, most notably Bond's—or Fleming's—attitude toward women. In her introduction to *Casino Royale*, Scottish novelist Candia McWilliam refers to what she calls the "pleasingly retro tropes of sexism," which generously excuses it as being of its time. There is racism and snobbery as well. But there are compensations. The plots are tightly constructed and play out in vividly realized settings;

Fleming is a master of the deceptively difficult art of creating a sense of place through the accumulation of physical details and sensations, without losing narrative momentum. (Kingsley Amis, who wrote the first of the many post-Fleming Bond novels, which include installments by Sebastian Faulks and William Boyd and a subgenre of Young

## FLEMING TRIED THE BOND MARTINI, WHICH HE "FOUND UNPALATABLE."

Bond novels by Charlie Higson, once said that the island in *Dr. No* was the perfect fictional location.)

The secondary characters, including Bond's colleagues, his foes and his women, are real enough to have survived countless reinterpretations on film and in the follow-up novels. Yet it is Fleming's Bond who still holds our attention. If *Spectre* proves anywhere near as successful as *Skyfall*, it will be not only because of masterful marketing but also because we still hunger to know more about the enigmatic presence at the heart of Fleming's novels and stories. **N**



# REWIND

25  
YEARS



NOVEMBER 5, 1990

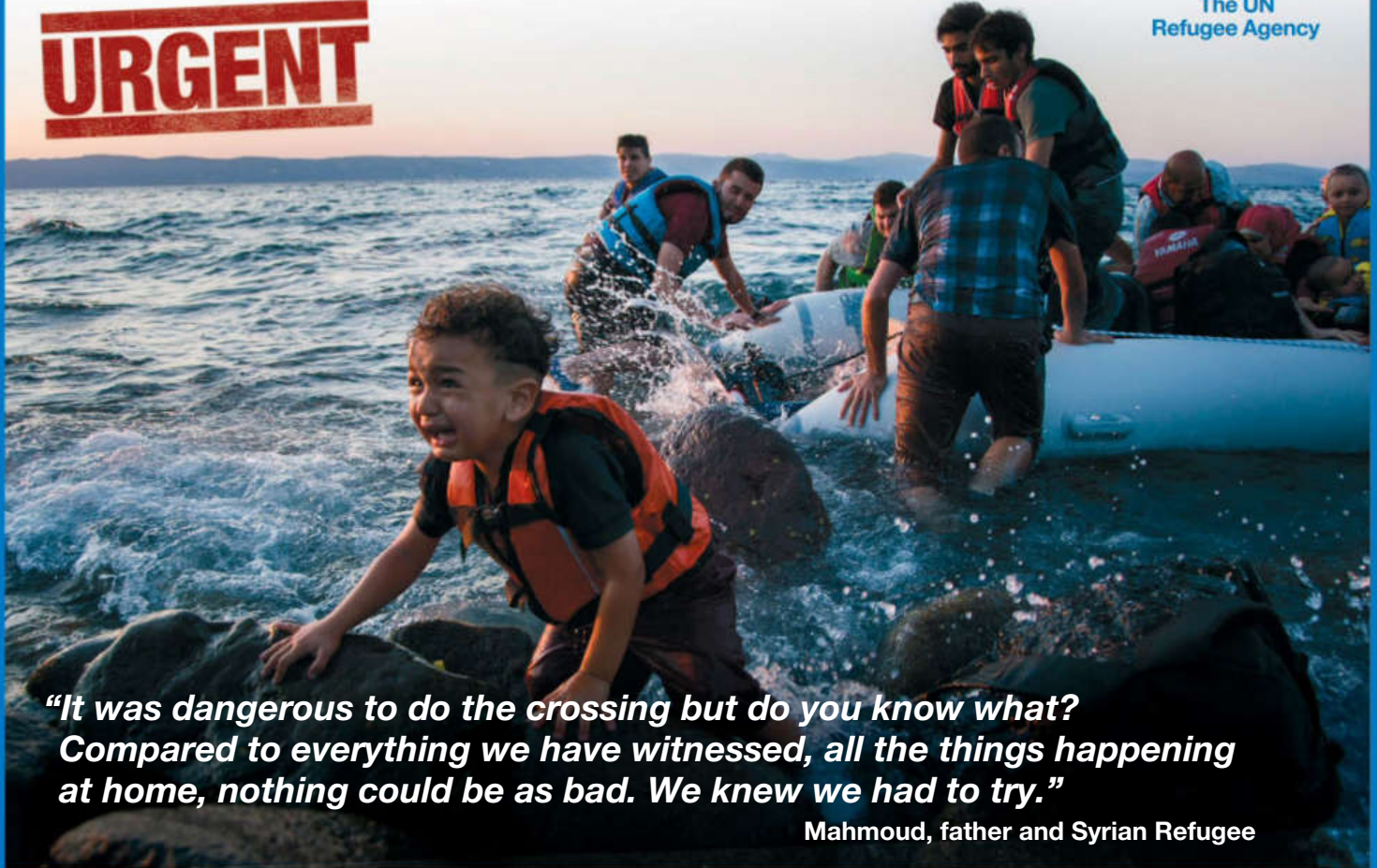
FORMER NEWSWEEK EDITOR JONATHAN ALTER REPORTS ON THE 1990 UNION FIGHT AT THE NEW YORK *DAILY NEWS*

“After 30 delivery-truck drivers walked out in protest, they were told their jobs were gone. On an hour’s notice in the middle of the night, management assembled replacements. Their transport buses were quickly assaulted by workers wielding baseball bats. Forty delivery trucks were vandalized and eight burned. Executives condemned the violence, but to them the smell was of victory.”

# REFUGEE CRISIS IN EUROPE

FAMILIES FORCED TO FLEE THEIR HOMES

## URGENT



***"It was dangerous to do the crossing but do you know what? Compared to everything we have witnessed, all the things happening at home, nothing could be as bad. We knew we had to try."***

**Mahmoud, father and Syrian Refugee**

Over 400,000 people have crossed the Mediterranean during 2015, undertaking unthinkable journeys from countries like Syria, that have been torn apart by war and persecution.

These families are fleeing for their lives, risking the treacherous sea and land crossings. Many having no choice but to board over-crowded, flimsy boats to give their children a chance of safety. For some, this desperate journey will be their last. Almost 3,000 people have drowned trying to reach safety in Europe. The crossing is dangerous but for many families making this journey is the only choice they feel they have.

**UNHCR is on the ground providing life-saving assistance but we need your help.**

You can help provide shelter, food, water and medical care to vulnerable families arriving in Europe.


With so many in need and as more continue to make this journey, your donation today is vital and will help UNHCR to save lives and protect families who have been forced to flee their homes.

**\$120 can provide emergency rescue kits containing a thermal blanket, towel, water, high nutrient energy bar, dry clothes and shoes, to 4 survivors.**



## PLEASE GIVE WHAT YOU CAN TODAY. VISIT [DONATE.UNHCR.ORG](https://donate.unhcr.org)



A STAR ALLIANCE MEMBER 

WIDEN YOUR  
WORLD

TURKISH  
AIRLINES



HAVE  
YOU BEEN  
EVERYWHERE  
YET?

TURKISHAIRLINES.COM